The Right Arm of the Warfighter

Defense AT&L interviews
Lt. Gen. Kathleen M. Gainey
Director of Logistics, J4, the Joint Staff

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The Right Arm of the Warfighter

Providing Logistics Support in a Nonlinear Battlefield

Lt. Gen. Kathleen M. Gainey, Director of Logistics, J4, the Joint Staff

In today's operational environment, there is no rear area. The battlefield is nonlinear and noncontiguous.

As military members move from a base to a forward position, they need a way to continue to receive ammunition, food, new equipment, and even clothing—a task made challenging when supplies have to travel to different countries, across rough and dangerous terrain, and to places where it is difficult to pinpoint the warfighter's exact location. Lt. Gen. Kathleen M. Gainey, the current director of logistics, J4, the Joint Staff, is working to ensure the logistics workforce is trained and prepared to operate in today's joint interagency and multi-national environment. She noted the metrics of success for a logistician should be measured through the eyes of the final customer: the warfighter. The general spoke further on today's joint logistics environment in an October 2008 interview with *Defense AT&L*.

Q

Your position as the director of logistics, J4, on the Joint Staff has been called the advocator and the integrator. Can you give us an overview of your roles and responsibilities?

A

My primary role is that of an adviser to the chairman of the Joint Chiefs for the entire spectrum of joint logistics, which includes maintenance, supply, transportation, medical, engineering, and contingency contracting fields. I review cross-functional requirements, and provide the chairman my best military advice and an awareness of the joint logistics environment. As the sponsor for the joint logistician and an integrator within the joint logistics community, I look at the joint logistics requirements of the combatant command-

ers and the chairman and then provide support and input to the Services, the Office of the Secretary of Defense, the Joint Staff, the multinational community, other government agencies, and key leaders. As the integrator for the community, I bring together all of the logistics "voices"—OSD, Services, combatant commanders, and our international and interagency partners—into a singularly focused enterprise. Finally, I work with the Services, functional combatant commanders, and agencies to streamline defense logistics and improve interoperability and effectiveness. My unwavering objective is meeting the joint warfighter's needs.

Q

You recently took over as the director for J4. What are your priorities for the next two to three years?

A

Before I start with the priorities, one has to understand the end state. I want to explain where we are going before we chart our path.

Our end state is to provide integrated logistics capabilities to the joint force commander. Ultimately, this gives the joint force commander maximum flexibility to achieve a mission because he has the ability to share resources among the Services. We aren't there yet, but over the next two to three years, the J4 will focus on three initiatives. These initiatives were developed through extensive partnering with the Services, combatant commands, OSD, and agencies, and they will direct joint logistics toward an integrated future state.

First, we will develop a common end-to-end defense supply chain framework and measurement system. This initiative addresses the processes, technologies, organizational cultures, and decision authority structures that reinforce optimization of the supply chain.

In the current state, we optimize the supply chain segments. The problem is that we have seams that degrade the overall logistics performance and the ability to get required resources to the right place at the right time, as measured at the point of consumption. There is no owner or responsible entity for the end-to-end supply chain with commensurate decision-making authority that can impact fiscal and process changes that will ultimately optimize end-to-end performance from the consumer's perspective. We allow ourselves to be driven by what we can measure and what portion of the segment we control. This subcomponent mentality and independent authority structure has resulted in disagreement on the consensus definition of "start/source" and "end/point of consumption" of the end-to-end supply chain. We need to evaluate how well we put the sock on the foot of the forward deployed soldier.

I lived this as the commander of the Defense Distribution Command. We were great at shipping customer demands

quickly. Often, we filled them well ahead of required delivery dates. So my metrics at the command looked great. However, we were not effective to the warfighter. The warfighter in the hot, dusty desert in Operation Iraqi Freedom had no ability to sort and store those items at the rate I was sending them. Our doctrine had not caught up with our peacetime practices of delivering dedicated shipments to supply points at major installations. As a result, the supplies got to their destination late, or not at all. U.S. Central Command and the Defense Logistics Agency adapted and created a route plan to group units at central destinations and aggregated supplies into packages called "pure pallets," and they changed our metrics, not just the individual steps. We need to have a holistic approach to the defense supply chain so that the entire process is optimized, and so that we understand the second and third order impacts of every change.

Second, we will recruit, develop, and sustain logisticians that can effectively work in a joint interagency and multinational environment. When I was a captain, I never had to think about multinational or interagency partners. No longer! Now, our logistics officers work hand-in-glove with State Department-led provincial reconstruction teams in Iraq and Afghanistan and with our coalition partners throughout the U.S. Central Command area of responsibility. We have already made great strides in this effort with the newly established Center for Joint and Strategic Logistics at the National Defense University. Joint logistics has been taught for years by our Service schools, but there has never been a mechanism to standardize the training throughout DoD or take on broad education initiatives for joint logistics. I am very excited about the potential to make a real difference in the community with this effort, and to get us all speaking in the same language and for it to have the same meaning!

Third, we need to incorporate life cycle management as a key decision factor throughout acquisition and sustainment processes. This initiative addresses the significant sustainment cost to the Services, given that weapon systems are often in service longer than the originally designed life cycle. During the design and early acquisition phase, cost tradeoffs among mission performance, development time, and life cycle sustainment are made.

Given that life cycle costs are deferred and not considered as part of the cost of acquisition, sustainment may be the cost that is traded off to facilitate approval of acquisition. In order to mitigate that shortcoming, this initiative takes a holistic approach to life cycle management from the earliest stages of acquisition through the sustainment processes across the Services, industrial base, and consumer communities. Another key component to this initiative is our role in supporting and championing the models that are used in developing key performance parameters. I think we can better support the Services in this area and, ultimately, drive effectiveness with efficiency as a byproduct and not the starting point.

Lt. Gen. Kathleen M. Gainey, USA
Director for Logistics, J4, the Joint Staff

Lt. Gen. Kathleen M. Gainey received her commission as a second lieutenant through ROTC in 1978 after graduating from Old Dominion University with a Bachelor of Science degree in special education.

Currently, Gainey is the director for logistics, J4, the Joint Staff.

Her previous commands include 5th Heavy Boat Company, Ford Island, Hawaii; 6th Transportation Battalion, Fort Eustis, Va.; 7th Corps Support Group, Bamberg, Germany; Defense Distribution Center, New Cumberland, Pa.; and the Surface Deployment and Distribution Command, headquartered at Scott Air Force Base, Ill.

In 1987, she attended Babson College, Wellesley, Mass., to complete her Master of Business Arts in contract management and procurement. In July 1989, she attended the Army Command and General Staff College, Fort Leavenworth, Kan., and she is a 1997 graduate of the Army War College.

Gainey's other assignments include chief of the Container Freight Branch, Military Ocean Terminal Bay Area, Military Traffic Management Command Western Area, Oakland, Calif.; program analyst, U.S. Armament, Munitions, and Chemical Command, Rock Island, Ill.; executive officer, 2nd Area Support Group, 22nd Support Command; S-2/S3, 702nd Transportation Battalion, Saudi Arabia; division transportation officer, 24th Infantry Division, Fort Stewart, Ga.; special assistant to the chief of staff, Army, Washington, D.C.; chief joint operations division, U.S. Transportation Command, Scott Air Force Base, Ill.; director, Force Projection and Distribution, Office of the Deputy Chief of Staff, G-4, Washington, D.C.; and deputy chief of staff, Resources and Sustainment, Multi-National Force-Iraq, Operation Iraqi Freedom.

Her awards and decorations include the Distinguished Service Medal, the Defense Superior Service Medal with oak leaf cluster, the Legion of Merit with oak leaf cluster, the Bronze Star Medal with oak leaf cluster, the Meritorious Service Medal with five oak leaf clusters, the Joint Service Commendation Medal, and the Army Commendation Medal with three oak leaf clusters. Her badges include the Army Staff Identification Badge.

Q

There has been a great deal of discussion about transforming the internal structure, processes, and culture of joint logistics. How is the joint logistics environment changing, and how it will affect future combat operations?

A

We used to say that combat service support forces (logistics, medical, personnel) and noncombatants such as contractors and DoD civilians would not be exposed to combat; they would operate in the rear. In today's operational environment, there is no rear area. The battlefield is nonlinear and noncontiguous. Our enemy knows no bounds; he will target soft areas and lines of communication. At one time, we could study the enemy—he was predictable and easily identifiable—but that is no longer possible. Now, with irregular warfare more prominent, we have had to adjust how we fight and how we support the warfighter. We are in a protracted war in which persistent conflict is becoming the new normal. This will require DoD to look at force structure adjustments that will give the warfighter a sustained force.

While the warfighting landscape and requirements continue to evolve, there arises a new set of imperatives for the joint logistics environment. These are things we must accomplish in order to achieve success: unity of effort, joint logistics environment-wide visibility, and rapid and precise response.

Regarding unity of effort, it is unlikely that we will ever truly have unity of command over logistics. Therefore, unity of effort, absent unity of command, is essential. In order to achieve it, we must define the processes, roles, and responsibilities. The processes must be common where applicable, must be transparent, and must share the same output metrics.

Visibility—More than in-transit visibility and total-asset visibility, we need visibility over the requirements, resources down to the retail level, and processes throughout the community. As for rapid and precise response, we need to meet the joint warfighter's demands of speed, reliability, and efficiency—but all through the lens of effectiveness. And we must measure this from the warfighter's perspective. Our metrics need to reflect how well we put the sock on the foot of the soldier or the dungarees on the sailor.

Q

The idea has been put forth to transform the J4 into a learning organization that is able to respond and adapt, and even anticipate the constantly changing needs of the joint force commander. What is your vision to achieve this goal?

A

To be a learning organization, we need to inculcate flexibility and agility into everything we do and think. To be responsive to the warfighter, we need to think like warfighters. We need to ask what would we do and how, and then lay out a concept

as the plan is developing so that we constantly adjust the plan as the requirements change.

To do this, we must:
- Understand the commander's intent and reach out to experts as needed
- Remain linked to operations and plans as they unfold so we can be flexible enough to adjust the concepts and support plans as requirements evolve
- Believe we are empowered to create solutions and execute them in the absence of guidance.

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Q

Regarding Operation Iraqi Freedom and Operation Enduring Freedom, DoD is currently engaged in two very different theaters, logistically speaking. What are some of the different lessons learned about joint supply and joint logistics emerging from these environments?

A

I recently traveled to the U.S. Central Command area of operations with Service component logistics chiefs and representatives, and it really allowed all of us to see how we are supporting the joint force commander. We visited several key service capabilities within Qatar, Bahrain, Kuwait, and Afghanistan, which gave us the opportunity to identify areas where we need to re-evaluate our strategy.

The Afghanistan area of operations is vastly different from Iraq. The dispersion of units, the isolation of many of the bases, and difficulty in traversing from one location to another is magnified tenfold. We need to tailor

support packages to account for those differences and challenges. Iraq solutions often do not work in Afghanistan.

There was significant value in touring the area of responsibility with a joint perspective. Some of the takeaways included the importance of capturing lessons learned to codify joint interoperability. We also committed to look at core joint doctrine to create standard procedures and terminology, and also to procure common equipment where practical.

We agreed to develop a common core curricula on joint logistics to teach in our institutions and schools at the captain through the colonel level. We need more common language to use as a base between Services. We also need to introduce interoperability with interagencies and our coalition nations as part of the curriculum as well. We have already started on this path with the recent approval for the Center for Joint and Strategic Logistics Excellence at the National Defense University.

Another lesson learned is that our lines of communication are as important as ever. Operation Enduring Freedom has reminded us how challenging this can be. We continue to find means to reduce risk by establishing alternate routes.

Q

Part of the stated mission of J4 is to create a flexible joint logistics environment that can maximize the joint force commander's freedom of action—a focus on expanding the "art of the possible" for commanders. What is your primary means of communicating with the joint logistics community in providing this?

A

You hit on the primary objective of the joint logistics community: giving the joint force commander freedom of action. We communicate this through several arrangements and pro-

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cesses. One way we do this is through my Conference of Logistics Directors (COLD). At this conference, we bring in the directors of logistics from every combatant command, the chiefs of logistics from each of the Services, leadership from OSD, and our multinational partners. This year, we added our interagency partners. While each COLD conference has a theme that changes each year, we spend a majority of the time addressing the logistical requirements and challenges of the joint force commander. COLD sets the agenda for the joint logistics environment and serves as an annual rudder check for the community to make sure we are all operating in concert to enable the art of the possible for the joint force commander.

In addition to the COLD conference, I conduct quarterly senior-level video conferences to facilitate dialogue with our combatant command directors of logistics. This provides a venue to update our progress on initiatives that came out

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of COLD and also to discuss any mid-year changes that we need to make. Finally, my staff and I are in constant contact with combatant command directors of logistics and their staff, and I am pleased with how well we work together.

Q
How do you define logistics visibility in a joint environment? What particular ob-

stacles do you need to overcome? How do you determine who gets what visibility and at what point in the process?

A
This is a key issue. Let me draw upon the keystone doctrine for joint logistics publications that was recently signed by the chairman of the Joint Chiefs of Staff. In Joint Publication 4-0, *Joint Logistics*, we have defined joint visibility as "having assured access to logistic processes, resources, and requirements to gain the knowledge necessary to make effective decisions."

Clearly, it is more than just having visibility of assets. Joint visibility fundamentally answers the combatant commander's questions:
• What is needed and by when?
• Where is it?
• How and when will it get there?

Depending on where you are in the process, you need different information. The user determines what level of information is required to perform a specific function. Through collaboration, we can work with the owners of the information to share it with key parties who need the transparency to inform or aid part of the decision process. We do need to be conscious of security issues, but we can still achieve transparency with appropriate security measures.

However, we are not where we need to be from a visibility perspective. As senior logistics managers, planners, and system developers, we must make a concerted effort to enhance visibility for everyone within the community. We must ask ourselves, "What can I give people access to and what processes must I change to permit this access?" Our inclination is to withhold information and access and wait until someone asks, and then we share only the segment requested instead of changing our processes to provide the appropriate visibility. It begins with trust and a belief that transparency in each others' processes and information will enable all logisticians to make better decisions, achieve effectiveness, and then target efficiencies. Visibility is not an end in and of itself, so we must determine the most appropriate source data to use to make decisions. It is also an objective we will continually strive toward. As the operational environment continues to

change, there will always be additional information requirements or demands for more comprehensive data timeliness and accuracy. As logisticians, we must improve the quality of our decisions so we can provide the joint warfighter more options.

Q

The complexity of joint operational logistics includes not only addressing the needs of all the Services, but also addressing multinational and interagency requirements. What are some of the lessons learned in managing such a diverse and complicated set of requirements?

A

We are still developing the lessons learned in this area, but what is clear is that the future fight involves our coalition and interagency partners. One challenge is that our systems and processes are not interoperable. If we are to truly optimize the attributes of all partners involved, we need to achieve interoperability. In a truly seamless logistics environment, a commander would have asset visibility throughout the region—regardless of to which Service, coalition partner, or agency he or she belongs. We are not there yet, but we have begun to work with NATO and discuss ways in which our IT systems can be integrated into NATO IT systems.

In order to have more interoperability between our international partners, I have liaison officers from the United Kingdom, Australia, and Canada integrated into my staff on a full-time basis. Through this arrangement, we have made great strides in developing and promoting U.S. multinational logistics strategy. We are also in the process of establishing relationships with some of our interagency partners that have logistics equities in the joint theater. I am eager to develop this area of joint logistics. We have made some progress, and I want to build on that progress by taking us to a new level in combined and interagency joint logistics.

With regards to the Services, we have seen the benefit of leveraging the strengths of each of the Services, and we are working better than ever. However, we clearly see the need to have better visibility across the Services for requirements, excess capacity, and transparency in business processes. To get at this, the Service logistics chiefs, U.S. Transportation Command, combatant commanders' logistics chiefs, and the director of the Defense Logistics Agency have all agreed to work on three key areas. These are:
• A common end-to-end framework and measurement system for the logistics community
• Joint education for logisticians that will enable them to succeed in the interagency, joint, and combined environment
• Life cycle management.

Q

I understand that contractors on the battlefield are playing an increasing role in providing logistic support. Why has the number of contractors increased, and to what extent is J4 involved in developing guidance and planning procedures?

A

For short-duration contingencies, we are dependent on existing weapon systems support contracts and other vehicles such as Navy contracts that support shipboard requirements in a specific geographic region. As operations grow in scope and duration, the need for contractors increases significantly as the demand for commercial air and surface transportation airlift, communications, life support, and other support capabilities either exceeds capacity or a commercial contract is a more effective solution. We are almost totally dependent on contract support in operations requiring reconstruction.

Several trends have led to a dependency on contractors. In the early to mid-1990s, budgetary pressures and force size restrictions led DoD to reduce the number of military and civilian employees (particularly those performing operational support) and outsource many of these functions. As a result, organic capacity no longer exists in many instances. Additionally, our current weapons systems have increased in technical complexity, and we chose to purchase readiness agreements, which places the burden for supplies and maintenance on the original equipment manufacturer.

We are deeply involved in developing guidance and planning procedures for operational contract support. We are partnered with the assistant deputy under secretary of defense for program support and are utilizing a collaborative approach with the military departments, OSD staff, the Joint Staff, and combat support agencies. Three years ago, we had no joint policy and limited doctrinal guidance for management and oversight of contracted support and contractors on the battlefield. Working together, OSD and the Joint Staff have identified initial capability gaps and have assembled a community of practice to close shortfalls. To date, we are updating key policies, developing relevant operational contract support doctrine, providing geographic combatant commands and the Joint Forces Command with joint operational contract support planners, and deploying synchronized predeployment and tracker systems to attain visibility and accountability of contractor personnel in contingency operations.

While operational contract support has proven to be a significant force multiplier, it can be a tremendous challenge during major operations and requires significant pre-planning management early in the operational planning process. We have much work still to accomplish, especially in the area of integrating operational contract support into joint operational planning scenarios.

Q

Lt. Gen. Gainey, thank you for your time and for sharing your insights with our readers.

Misunderstood Superheroes

Batman and Performance-Based Logistics

Randy T. Fowler

Illustration by Jim Elmore

The situation: Normal institutional processes are not working. The forces of evil are gaining the upper hand. At a loss to stem this death spiral, the entrenched bureaucracy turns to a new hope. Using unorthodox but highly effective techniques, a lone champion takes action and slowly turns the tide, pushing the forces of evil over the edge.

However, in the midst of continuing success, this new champion's techniques, methods, and even motives are continually questioned.

Sound familiar? Are we talking about Batman or PBL (performance-based logistics, or alternatively, performance-based life cycle product support)?
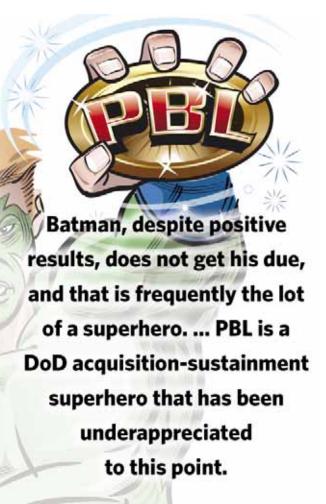
Batman captures our imagination because he is an uncommon superhero. His methods don't conform to established practices. The Caped Crusader is incorruptible but no choir boy. For example, Batman uses enhanced interrogation techniques and global cell phone taps in *The Dark Knight*, the latest Batman movie from Warner Bros. Pictures. He lives somewhat on the dark side. What's more, he possesses no super-human powers. Yet Batman effectively fights chaos and crises with a commitment to the ultimate good of society.

But does society understand and appreciate Batman? Ultimately, no. An ungrateful society, Gotham City, protests his vigilantism and unorthodox crime-fighting techniques. *The Gotham Times* newspaper headlines scream: "Batman: Savior or Menace?" (<www.thegothamtimes.com>). You can't get much more misunderstood than that. Public sentiment aligns more with the vulnerable White Knight—Two Face, aka District Attorney Harvey Dent, who represents the interests of City Hall and, ideologically, the mass community.

How do the Batman myth, ethos, and psychology pertain to PBL? PBL—born on the dark side in the 1990s, perhaps with a tad of vigilantism to shake up a death-spiraling, transaction-based logistics system—continues to be mischaracterized, misunderstood, and, therefore, often either skeptically embraced or totally despised. Whenever I encounter critics of PBL, I listen closely to see if they understand PBL. Most do not. The following discussion will examine why PBL is misunderstood and what can be done to overcome that misunderstanding.

Definition of PBL

Ask almost any acquisition and sustainment professional, "What is PBL?" and within the first 30 seconds, most will respond with a strong perception that "PBL is contracting out logistics." This is an erroneous observation. I often challenged Executive Program Management students at the Defense Acquisition University, saying that one sure way to fail the logistics class was to leave the classroom thinking that PBL is contracting out. Even so, many of them should have failed. During a recent discussion about continued policy emphasis on PBL, Under Secretary of Defense for Acquisition, Technology and Logistics John J. Young referred to his Navy experience with PBL and contracting out. He readily accepted my polite correction that effective PBL requires balanced contribution by both public- and private-sector providers.

Batman, despite positive results, does not get his due, and that is frequently the lot of a superhero. ... PBL is a DoD acquisition-sustainment superhero that has been underappreciated to this point.

Like the confusion over Batman's psychology, this confusion about defining PBL is complex and mysterious. The Department of Defense has consistently defined PBL as "the purchase of support as an integrated, affordable performance package designed to optimize system readiness and meet performance goals for weapon systems through long-term support arrangements with clear lines of authority and responsibility" (*Performance Based Logistics: A Program Manager's Product Support Guide*, DAU Press, 2005). DoD's overarching basis for PBL has consistently been warfighter-focused to deliver improved operational readiness outcomes at best-value cost. DoD's framework for PBL has consistently embraced a spectrum of public- and private-sector provider strategies, with partnering being an integral component of PBL approaches. Despite these policy and procedural consistencies defining PBL, the perception formed, and indeed grew, that PBL is contracting out logistics.

Part of the reason for this perception is that contractors have been effective and integral to most of the PBL strategies employed to date. PBL has not significantly changed DoD's reliance on contractors; it has only changed the nature of how we use their services. Simply put, we have transitioned from buying iterative discrete quantities of goods and services (transactional logistics) to acquiring sustainment via top-level outcomes (PBL).

The most mysterious part of the misperception is the seeming desire by skeptics and critics to characterize PBL as "contracting out" in an attempt to claim PBL is bad for the DoD enterprise, infrastructure, battlefield operations, information technology systems, and the competencies of the organic workforce. That need not be the case, but PBL is a demanding strategy that requires change in many organic infrastructure concepts. The next-generation PBL strategies need to offer improved attention to the enterprise integration effects—but the DoD infrastructure has to step up to a different incentive set in next-generation thinking as well.

Product-Support Integrators

Linked with the PBL definitional issue is a misunderstanding of the PBL tenet to employ a product-support integrator. Most people believe using an industry PSI equates to doing a wholesale outsourcing of logistics, which is wrong because the integrator integrates, which does not imply performing all logistics services.

In this case, the misperception is more understandable because to this point, most PSIs have been industry original equipment manufacturers (OEMs). However, there is no basis in policy or guidance for preference for an industry PSI. DoD policies and procedures have consistently encouraged flexibility with respect to PSIs. A PSI is defined as "an entity performing as a formally bound agent (via contract [industry] or memorandum of agreement/understanding [government]) charged with integrating all sources of support, public and private, defined within the scope of the PBL agreements to achieve the documented outcomes" (*Performance Based Logistics*, DAU, 2005). This definition accommodates a government or industry PSI. Organic PSIs can work. Naval Inventory Control Point is the PSI for several subsystem PBL strategies that use performance-based contracts with contractors holding them accountable for performance outcomes.

I believe the DAU PBL training curriculum gets it right by having students fully consider PSI alternatives such as the OEM, a sub-tier industry provider, a depot, an inventory control point, the program management office, or a third- or fourth-party logistics provider. DAU students have been diverse in determining their preferred PSI option. DAU faculty estimate that 65 percent of the students determine the OEM to be the preferred PSI; 15 percent elect a sub-tier industry provider; 10 percent choose the PM; and 10 percent select an organic source. The figures are a DAU faculty estimate consolidated by the university PBL program director in August 2008.

Many misconstrue the true role of a PSI. PSIs do not "control" a platform's sustainment, nor do they perform or even manage all of the support functions. An industry PSI is prevented from doing so by statute (Title 10 U.S. Code), policy, and Service preferences for organic support. I believe a clear misunderstanding of the PSI role is the basis for the recently proposed House Armed Services Committee language (Section 823), which recommends restricting PSI performance to organic sources—a position opposed by DoD.

The determination of a PSI comes down to which entity has the best ability to drive life cycle systems engineering influence into the asset (to include reliability improvements), who can best direct supply chain management decisions to assure parts availability and obsolescence management, and who can be incentivized to work as an agent for the program manager to meet the operational sustainment metrics. These are all integration functions. Government entities can perform all of them, but arguably are not as well-equipped as the OEM. Government entities lack laser-focus accountability, they are not financially at risk, they have little discretion to invest funds, and they are hesitant to decrease workload. A military service senior leader recently offered, at a PBL forum, the opinion that it is not typically in the incentive set of a depot, for example, to drive away workload; and to some degree, that is what a PSI must do for the sake of reduced operational logistics burden and a reduction of long-term sustainment costs.

Figure 1. **Examples of PBL Cost Benefits**

Program	System Description	PBL Owner	Total Cost Benefit ($M)
C-17	transport aircraft	Air Force	$477
F/A-18	fighter/attack aircraft	Navy	$688
AH-64	attack helicopter	Army	$100
TOW-ITAS	integrated mobile missile and targeting system	Army	$350
Sentinel AN/MPQ-64	mobile air defense radar	Army	$302
CH-47 (UK)	cargo helicopter	UK Ministry of Defence	$250

Cost of PBL

Cost savings are another misunderstood attribute of PBL. The Government Accountability Office has consistently asserted it cannot validate claimed PBL cost savings. (GAO Report 05-966, September 2005, and GAO Draft Report 09-41, November 2008). Yet, several DoD programs demonstrate cost benefits achieved by PBL strategies (Figure 1).

Cost savings and avoidance calculations are some of the most inexact art forms within government. I should know; I have been a DoD analyst for a long time. Analysts and auditors, particularly those with an agenda, can make the numbers reflect the case desired. Such facts must be treated with caution.

DoD needs more clear and compelling insights into the cost benefits of PBL strategies. However, I believe the evidence is and has been there. It's a question of whether some parties really want to understand and embrace the data. Going back to the genesis of PBL, we were committed to reversing

the aforementioned "death spiral" of readiness degradation associated with severe upward trends in operations and sustainment budget accounts. Admittedly, after the Sept. 11, 2001, terrorist attacks, DoD's attention turned more to the warfighter urgency associated with increased readiness, sortie generation rates, and equipment ready for tasking. An excellent question would be what would have been the cost of supporting the Global War on Terrorism without PBL. Now, that's about as scary as Batman's psychotic nemesis, the Joker!

Business Case Analysis

The most debated characteristic of Batman is why he does not kill his foes. The most debated characteristic of PBL is the business case analysis. Sometimes I wish we would just kill the BCA! It is probably the most misunderstood and misused aspect of the PBL process. No, on second thought, I would not kill the BCA if it can be understood that it is not an end in itself and that BCAs are meant to be iterated to explore alternatives and find the best balance among sustainment alternatives.

In its simplest form, the objective of the BCA is to determine the best value basis for a strategy. Elements of the BCA include costs, risks, alternatives, outputs, and outcomes. Many of the early BCAs examining PBL strategies were limited to cost analysis, which created unhealthy decision making and suppressed creative PBL approaches.

We have progressed beyond the myopic orientation on near-term costs in the BCA. The guidance of DoD and the Services has become clearer about the "best value" objective of the BCA. Still, the Services apply an inordinate number of resources to the BCA, to the extent that a BCA cult mentality has evolved. Many still forget the BCA is a means to determine a performance-benefiting end, not the end itself.

As DoD examines where to proceed with next-generation PBL, the role and methodology of the BCA must be clarified. One simple suggestion is to label the BCA as a life cycle management BCA. There are a myriad of BCAs prevalent in government and within the acquisition process, so specifying a BCA that is directed at optimizing the LCM concept of operations seems a healthy refinement.

Figure 2. Examples of PBL Performance Benefits

Program	System Description	PBL Owner	Availability Improvement[1]	Cycle Time Reduction[2]
F/A-18	fighter/attack aircraft	Navy	23%	-74%
Tires	aircraft tires	Navy	17%	-92%
F-22	fighter	Air Force	15%	-20%
UH-60 Avionics	utility helicopter	Army	14%	-85%
F404 Engine	jet engine for the F/A-18 aircraft	Navy	46%	-25%

1. Ready for tasking, operational readiness, mission cabable, etc.
2. Logistics response time or repair turnaround time

PM Responsibility and Control

Speaking of superheroes, here's to the PM! In my opinion, no job scope in the federal government compares to the responsibilities of the PM (particularly when you rank the responsibilities associated with the position). Chuck Cochrane, former DAU PM Center director and one of the best program management experts I know, cites DoD 5000 policy as establishing more than 500 "shall do's" and many more "expected to do's" with which the PM must contend. No wonder PMs sometimes appear selective in the balls they attempt to juggle.

Now here come the "loggies" with another big ball to throw at the juggler: PM responsibility for total life cycle systems management as mandated in DoD Directive 5000.1, para. E1.29, May 12, 2003. Being a life cycle manager is not an insignificant or marginal duty. Moreover, we logisticians have never made it easy for the PM, with our 10 elements of logistics support; countless "ilities" to emphasize; complex supportability analysis and documentation methods; and a tendency to wallow in stovepipes of supply, maintenance, transportation, and arcane IT systems. No wonder we drive PMs crazy.

First, despite the fact that it is mandated by DoD regulation, not all PMs readily accept responsibility for sustainment. Second, some in the logistics enterprise do not trust the acquisition and PM community to manage and control sustainment functions because PMs often vertically integrate their support systems, whereas the logistics infrastructure tends to be more horizontally focused. Third, PMs who want to take on the responsibility often become frustrated at their inability to be effectively accountable because of the myriad of input and output funding sources that must be amalgamated to achieve effective system management.

PBL, with its outcome-focused principles, metrics, and incentives, serves as a simplifying strategy for the PM. PBL offers a one-stop approach for the PM to perform effectively as the life cycle manager. PBL is the best enabler of the total life cycle systems management concept; it provides a means for the resource-constrained program management office to develop, implement, and manage the sustainment of a system over its life cycle. Transactional logistics, with its dispersed support organizations, distributed funding, and lack of top-level system integration function, is too unwieldy (to say nothing of ineffective) for the PM in terms of effectively performing as the life cycle manager. All of these PM responsibility issues must be worked. Paraphrasing Batman, "It's not who you are, it's what you do that defines you" (*Batman Begins*, Warner Bros. Pictures).

PBL Success

Usually at this point in a PBL article, the author cites how many PBL applications there are to date. If one insists on counting, most experts estimate there are

over 200. But I'm tired of counting. PBL has been DoD policy since 2003, and the strategy shows signs of institutionalization in the Services, Defense Logistics Agency, industry, and internationally. Figure 2 summarizes some of the performance benefits associated with many of the more prominent PBL program applications. Benefits tend to be characterized in two primary dimensions—readiness or availability improvements, and cycle time reductions measured by logistics response time and repair turnaround times.

Annually at this time of the year, DoD honors the best of the PBL programs with the Secretary of Defense PBL Awards. This year's winners are:
• System Level: F-22 Raptor (Air Force)
• Sub-system Level: ALR-67(v)3 Radar Warning System (Navy)
• Component Level: AN/TSQ-221 Tactical Airspace Integration System (Army).

This is the fourth year of the PBL awards and the first that each of the military services has captured one of the award categories.

The Way Ahead

The evidence is clear: PBL works. PBL delivers dramatic improvements in performance with lower operating costs across the total life cycle. PBL does more for the warfighter with less from the taxpayer. Instead of paying for transactional activities, the government and industry partners deliver improved performance at lower costs.

Ten years of implementation attest to the fact that PBL has been institutionalized. It is time to evolve and refine its application. There are issues to be worked out and PBL methods to make more repeatable and better integrated with Defense logistics enterprise strategies. The future path is not to move away from PBL, but to recognize its value and work diligently to improve and spread its application.

In a July 31, 2008, memorandum ("Implementing a Life Cycle Management Framework") from Young, and in the draft DoD Instruction 5000.02, *Operation of the Defense Acquisition System*, the Office of the Secretary of Defense affirmed the continued policy emphasis on PBL. In this affirmed direction, OSD makes one notable change: Renaming performance-based logistics to performance-based life cycle product support. This change in nomenclature reflects a more precise calibration of the targeted acquisition and sustainment application of PBL and indicates progressiveness in understanding the nature of PBL. Do not read anything more into the name change than that—it is to help understanding and correct some of the past misunderstanding.

One key ingredient for more effective PBL strategies is better acceptance in the logistics community. Like Bruce Wayne (aka Batman), who was orphaned from his family, PBL has in some quarters been orphaned from mainstream logistics.

PBL seems to strike animus and angst in government logisticians. I firmly believe that this perspective is based on lack of knowledge of the PBL business model, particularly the vital role for government managers' oversight and integration of PBL strategies. I have faith that our logistics community wants what is best for our warfighters, and that a continued emphasis on reshaping our government workforce to become PBL managers can turn skeptics into advocates.

We must also focus on how to effectively integrate PBL into future acquisition and sustainment governance processes. In response to this challenge, PBL can be an excellent lens in establishing post-initial operational capability reviews. PBL can also give the military services greater affordability, agility, flexibility, and resilience in future sustainment strategies.

We are examining these areas and more in a product support assessment and way ahead review initiated in September 2008. Integral to the assessment is examining the PBL strategies launched, matured, working, and not working over the last decade. These fact- and data-based insights will drive the discussions and debates about how to fix issues with current sustainment strategies and how to evolve future life cycle management strategies. I sincerely hope we are willing to move forward with strategies more approximating next generation PBL and not a return to the past "schlock and dreck" of transactional-based logistics, emphasizing buying parts and support equipment, and driving PMs crazy with stovepiped logistics.

PBL: Unappreciated Superhero

Batman, despite positive results, does not get his due, and that is frequently the lot of a superhero. Today, we need solutions more than ever. The country and DoD face a budget crisis of enormous dimension. Retrograde, recapitalization, reset, reconstitution of the force, and the continuing long war on terrorism are challenges that will not go away.

PBL is a DoD acquisition sustainment superhero that has been underappreciated to this point. Even if one does not understand what is going on inside the soul of PBL, it is still a proven superhero—and in the 21st century, superheroes are in short supply.

There is no better way to understand than through communication. In this article, I've attempted to do that, and I look forward to the cards and letters to follow—love notes and hate mail alike. We must move away from parochial interests, focus on the greater good, and establish a dialogue to define and implement the next-generation product support strategies that are warfighter-focused and drive down sustainment costs. PBL is a vital and necessary component of that dialogue.

A Capability-Focused T&E Framework

Steven Hutchison

am just going to say it: I don't like the terms *developmental test* (DT) or *operational test* (OT). For that matter, I don't like the term *integrated test* either. The terms generally describe test and evaluation activities at different stages of capability maturity, but they also allude to the different organizations that dictate the terms and conditions of the test—the program manager

Hutchison *is the test and evaluation executive with the Defense Information Systems Agency.*

for DT, an operational test agency (OTA) for OT, and some combination of the two to do integrated testing. I guess the reason I don't like the terms is because they represent a *who does what, when* model for T&E instead of a model focused on the capability. I also don't like the terms because the DT/OT model is not complete—there is far more to T&E than DT and OT.

I believe the fundamental purpose of T&E is to enable successful acquisitions of enhanced capabilities for the warfighter. I've chosen those words carefully.

T&E is an enabling process. It is not a question of who does what, but a question of so what?—that is, once the test is done, regardless of by whom, are we confident that the new capability will improve something for the warfighters? To be an enabler in acquisition, we need a model for T&E that is holistic, in which every test event is a shared resource of all stakeholders, regardless of when it occurs, with one purpose in mind: To answer the so what question. Our model must de-emphasize the who and emphasize the what. The following paragraphs discuss a way to get there from here.

A Rice Bowl Environment

First, we need to understand where we are today. Through the course of evolution of the DoD 5000, we have created a multitude of process owners—materiel developer, combat developer, user, tester, decision maker. Today, we are also thinking about capability portfolio managers, although their role in the acquisition process has yet to be determined. Suffice it to say that in the course of creating the acquisition process, we have built a complex environment of rice bowls (meaning a person's small part of a bigger process) and process ownership. And in some cases, process owners staunchly protect their rice bowl.

Moreover, when the department merged acquisition of automated information systems into DoD 5000 in 1996, we added more process owners, such as the interoperability certifier and the designated approving authority (information assurance certifier). (From 1978 to 1996, DoD managed acquisition of AIS under DoD 7920 and 8120 directives and instructions. The 1996 issuance of the DoD 5000 consolidated weapons and AIS acquisitions.) However, we did not fully define their role in acquisition decision making. For example, the process owners for interoperability and information assurance, the Joint Staff J6, and DAA respectively, do not sign the T&E master plan, even though they are principal customers of significant T&E activities. And when it comes to a fielding decision, the milestone decision authority can make a decision to buy capabilities for fielding to the enterprise, but the DAA can deny operations of that capability on the local network.
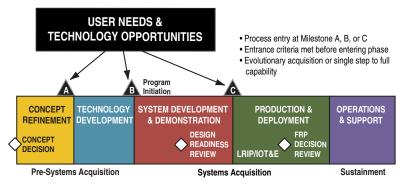
The traditional approach to developing a T&E strategy for an acquisition program is to knit together a series of test events that we generally describe as either DT or OT (live fire T&E is not addressed in this article). In doing so, we tacitly assign responsibility for those events to their respective process owners—the PM plans and conducts DT; an OTA is responsible for OT. Somewhere in the mix, we add interoperability and information assurance test events, and responsibility for those activities is thereafter delegated to their process owners. Once the many parties agree to the strategy, the process owners move off to their respective corners and plan their events, and coordination between them is minimal if it occurs at all. This is a worst-case scenario, of course; not all programs experience this.

Recent policy revisions attempt to influence and improve the coordination between the process owners, by blending DT and OT into an integrated testing model that is seamless throughout a system's life cycle (see Memorandum, Subject: Test and Evaluation Policy Revisions, DOT&E and AT&L, Dec. 22, 2007). The new policy does not specifically identify interoperability testing and information assurance as part of the integrated test model, but an integrated model is not complete without them. At its core, however, integrated testing is fundamentally a call for early involvement to bring the government's testers forward in the acquisition process. In the words of the new policy, "T&E expertise must be brought to bear at the beginning of the system life cycle…" This is based on the theory that early involvement of the testers leads to early problem discovery and correction, and therefore the program is more likely to successfully negotiate the acquisition process and achieve a fielding decision.

Early involvement has been a consistent theme in T&E in the department for decades. So why is it so hard to come by? The answer is a bit of a blinding flash of the obvious: Because we made it this way.
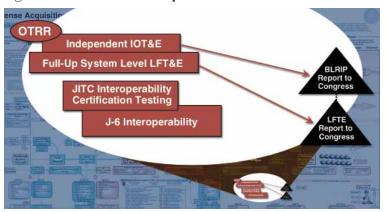
The Myth of Early Involvement

There is a saying that a picture is worth a thousand words. Unfortunately, even though I'm using pictures, this paper will not be thousands of words shorter.

Figure 1 is a picture of the Defense Acquisition Management Framework taken from the DoD Instruction 5000.2. Observe how the graphic con-

Figure 1: **The Defense Acquisition Management Framework**

- Process entry at Milestone A, B, or C
- Entrance criteria met before entering phase
- Evolutionary acquisition or single step to full capability

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Figure 2: **IOT&E in the Acquisition Process**

veys the relationship of T&E to the acquisition process: one test—the initial operational T&E (IOT&E)—post Milestone C! This is not a very complete picture of the role of T&E, and certainly not one that depicts early involvement.

An equally familiar and far more detailed view of the acquisition process can be seen in the "Integrated Defense Acquisition, Technology, and Logistics Life Cycle Management Framework Chart," or more commonly called the "wall chart." (Go to <https://acc.dau.mil/IFC/index.htm> for a complete view of the wall chart.) Finding T&E in this wall chart is a bit like looking at a *Where's Waldo?* picture book. The one test event that is so prominent in the first figure is here as well; it's just hard to find. Figure 2 zooms in to show the IOT&E.

Now, given this greater detail, look at how we illustrate the IOT&E in the acquisition process: the output feeds a critical report, which in turn feeds a decision event, but—do you see it?—there are no inputs!

The thousand words described by these pictures can be summarized in these few: Testers are not involved early, and what happens in the development phase has no bearing on the IOT&E. Note that it says the same thing about interoperability testing as well. That is, of course, not the way it is in the real world; I'm just trying to shed light on the myth of early involvement.

A closer inspection of the wall chart, however, reveals seven different T&E activities (not including live fire T&E or the military utility assessment associated with the advanced concept technology demonstrations). Figure 3 zooms in to show these seven activities. Observe that T&E activities do not begin until the latter part of the system demonstration phase—again, not what we consider early involvement.
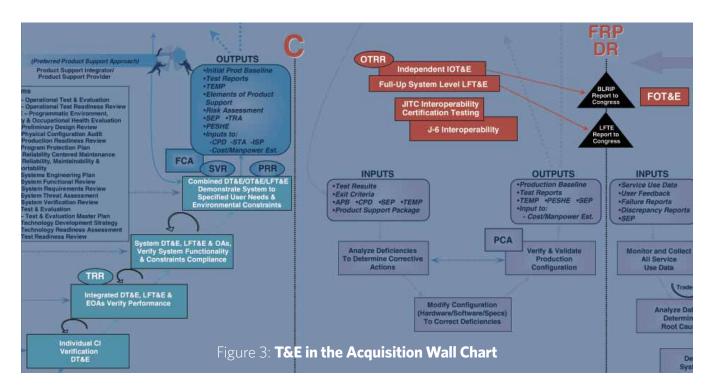
Our pictures need to tell a different story. More importantly, our DoD directives and instructions need to tell a different story.

The Reality of Early Involvement

If the measure of our early involvement were the number of programs found effective and suitable today, I'd say we've been found wanting as an enabler of successful acquisitions.

There is a very basic explanation for why we have such trouble with early involvement and integrated testing: Because we don't have to. The DoDI 5000.2 creates these rice bowls and assigns their process owners. For example, in the May 2003 version of 5000.2, paragraph E5.1.2 says, "The PM shall design DT&E objectives appropriate to each phase and

Figure 3: **T&E in the Acquisition Wall Chart**

We wrote an acquisition model that fosters an environment of process owners who protect rice bowls. But since we wrote the model, we can rewrite it.

milestone of an acquisition program. … The OTA shall design OT&E objectives …"

Those statements make it clear who owns DT and who owns OT. A subtle change occurred, however, in the revisions currently proposed to the 5000.02. At the time of this writing, the final draft of the 5000.02, paragraph E5.3, uses the following wording: "The PM shall design DT&E objectives appropriate to each phase and milestone of an acquisition program. … The OTA *and the PM* shall *collaboratively* design OT&E objectives [emphasis added] … "

Isn't it interesting that collaboration between the PM and OTA is indicated for OT&E, but not for DT&E? The main

tenet of integrated testing is to get the OTA involved in DT, so we still have not accomplished the change that is needed. A little further in Enclosure 5 (May 2003 version) are the paragraphs E5.1.5 and E5.1.7, which have the following paragraph headers:

- "E5.1.5 Developmental Test and Evaluation (DT&E). During DT&E, the materiel developer shall …"
- "E5.1.7 Operational Test and Evaluation (OT&E)."

Again we see the 5000 delineating responsibility, especially in the case of DT. Reading through the sub-paragraphs, it is clear that integrated testing is neither expected nor encouraged. Nowhere within E5.1.5 or E5.1.7 are instructions requiring coordination between the materiel developer and the OTA. Interestingly, subparagraph E5.1.5.8. does instruct the materiel developer to "support the DoD Information Technology Security Certification and Accreditation Process [DITSCAP] and Joint Interoperability Certification process" during DT&E.

The new version of the 5000.02 is fundamentally unchanged with regard to the content of these paragraphs. That's disappointing, especially given the recent emphasis on integrated testing. One might have expected instructions for materiel developers to consider OTA input in developmental test designs and allowing OTAs to collect data during DT. At the extreme, one might expect to eliminate the paragraphs on DT and OT altogether and substitute them with a single paragraph on integrated testing.

That's the blinding flash of the obvious—we wrote an acquisition model that fosters an environment of process owners who protect rice bowls. But since we wrote the model, we can rewrite it.

Different Terminology

We have a lot of different terms for the types of T&E we do, but not many of them have universally accepted definitions. Depending on where you look, you can find different definitions for most of our common terms. For example, even the term operational testing, which has the widely accepted definition given in Title 10, §139, differs in Joint Publication 1-02, the *Department of Defense Dictionary of Military and Associated Terms.*

A quick check of the *Glossary of Defense Acquisition Terms* and the *Test and Evaluation Management Guidebook* shows that some of

Figure 4: **Test and Evaluation in the DoD Acquisition process**

Activity	Test Agent	Conditions	Customer	Reference
DT&E	PMO/contractor/ government DT organization	As determined by PMO; generally benign; lab, developer personnel	PMO	DOD 5000
OT&E	Independent OTA	"operationally realistic … typical users"	MDA	Title 10, DoD 5000
Joint Interoperability Test Certification	JITC	"applicable capability environments"	J6	DoDD 4630.5, DoDI 4630.08, CJCSI 6212.01D
IA Certification and Accreditation* (Security T&E) (DIACAP)	OTA, DIA, FSO, NSA	Operational, lab	DAA	DoDI 8510.01 * Note also the DOT&E policy on testing IA during OT&E. DIACAP C&A does not complete the requirement for IA testing

our most common T&E terms—like DT, IOT&E, and follow-on OT&E—are all defined differently to some degree. And despite the fact that we have been talking about integrated testing for decades, neither of those sources provide a definition of the term.

On April 25, 2008, the director for operational test and evaluation and the deputy under secretary of defense for acquisition and technology provided a definition of integrated testing: "Integrated testing is the collaborative planning and collaborative execution of test phases and events to provide shared data in support of independent analysis, evaluation, and reporting by all stakeholders, particularly the developmental (both contractor and government) and operational test and evaluation communities."

There are three key elements to this definition: collaboration, shared data, and involvement of all stakeholders. For most systems in the acquisition pipeline today, there is an information technology element, be it software, hardware, or communications. Integrated testing gets harder when T&E for information technology is part of the equation. When do we do the information assurance and interoperability tests? Under what conditions? Who can do the testing? Who is the customer? Organizations other than the PM and operational test authority may have to be brought in to perform the tests: the Joint Interoperability Test Command for the joint interoperability certification; and for the information assurance certification, the program might have to bring in a security tester, such as the National Security Agency or Defense Intelligence Agency.

Note the use of terminology on the acquisition wall chart:
• Individual CI [*Configuration Item*] Verification DT&E
• Integrated DT&E, LFT&E [*live fire test and evaluation*], and EOAs [*early operational assessment*]
• System DT&E, LFT&E, and OAs
• Combined DT&E/OT&E/LFT&E
• Independent IOT&E
• JITC Interoperability Certification Testing
• FOT&E.

It is hard to find definitions of all of these terms. However, an important characteristic of the terms is that they reflect a progression from testing individual components to the integrated system, as well as increasing operational realism—from EOAs to OAs to OT&E. That type of progression is a good thing, but with all this emphasis on integrated testing, the terminology might need work. And of course, as depicted on the wall chart, T&E starts late in the game—early involvement should move most of the T&E activities shown in Figure 4 into technology development and system integration. Also, the way the picture tells it, interoperability testing is not part of the integrated test model, and it's noteworthy that information assurance certification testing is not on the chart (there are references to DITSCAP certifications on the back of the wall chart; the Defense Information Assurance

Certification and Accreditation Program has since replaced the DITSCAP). We need a complete picture.

The question is how to create a framework for T&E in DoD that combines all of the elements described above into a more efficient and effective process. I propose a new model that will do that—I call it the Capability Test and Evaluation Model.

Capability Test and Evaluation Model

A common trend in DoD is to talk in terms of capabilities: the term *requirements* is out, and *capabilities* is in; the term *threat-based* is out, and *capability-based* is in. Moreover, we now hear about capability portfolios and joint capability areas. Hence the name Capability Test and Evaluation, or CT&E.

The intent of the CT&E Model is to:
• Share information
• Improve risk management
• Eliminate duplication and reduce cost
• Conduct comprehensive, mission-focused test events, faster
• Ensure decision makers and users have all relevant information to better understand capabilities and limitations.

In other words, the intent of CT&E is to enable rapid acquisition of enhanced capabilities for the warfighter.

We must recognize that T&E is a continuous process throughout the program life cycle, not just one event occurring after Milestone C. Multiple process owners conduct T&E. However, because we do not have one organization that is ultimately in charge of all of these T&E activities, we foster an environment of serial events, multiple reports, and incomplete information to decision makers.

Capability T&E is all about unity of effort. But to achieve this unity of effort, we need unity of command—a good military phrase meaning somebody has to be in charge. There are at least four different test/certification activities on the road to a fielding decision—different tests, for different customers, conducted under different conditions, and under different rules. Figure 4 depicts the relevant T&E and certification activities that occur in the acquisition process.

Capability T&E brings the four test/certification activities into each test event, beginning as early in the acquisition process as practical. The CT&E model can therefore be described as one team, one set of conditions, every time. The objective of CT&E is to satisfy the decision-making needs of all test customers. CT&E test designs are risk-based, mission-focused. Typical users exercise the capability during the test. A capability test team plans and conducts the CT&E Model, and ideally, prepares one report for submission to all customers. CT&E in no way limits the independence of the OTA or its ability to provide independent, objective evalua-

Some Additional Rules

I liked Wayne Turk's article "Step up to the Podium" in the September-October 2008 issue of *Defense AT&L* magazine. It presented many practical tips for preparing, crafting and giving an effective presentation, and preventing the dreaded "Power-Point® Poisoning" that is so common these days. I plan to distribute the article to all the members in my division as a guide for when they need to make a presentation.

I would like to suggest another technique for effective presentations. A lot of benefit can be realized with pre-briefs of meeting participants before the actual presentation is given. Pre-briefs and offline meetings allow a lot of peer review prior to the formal presentation. It's a good opportunity to get early feedback to be able to tweak the presentation and avoid dropping any bombshells at the actual meeting. We do this routinely here at Naval Air Systems Command. A pre-brief also allows people to concentrate more fully at the actual presentation because it's not the first time they've seen it and they don't have to so many questions.

I also liked Brian J. Duddy's article "To Boldly Go ... Into Defense Acquisition: The Program Manager's Rules Of Acquisition" in the September-October 2008 issue of *Defense AT&L* magazine. The Star Trek theme was an entertaining way to effectively present important information. I liked the rules the author cited, especially the ones about clarity in the statement of work. And I agree whole-heartedly that verbal agreements aren't enough.

I would like to suggest that formal contract modifications aren't always necessary. Naval Air Systems Command routinely holds technical interchange meetings, and the minutes from these meetings provide the written agreements about changes that are made. Minutes are rarely, if ever, disputed, and are a much easier, cheaper, and faster mechanism than a formal contract modification to document changes. Also, making every agreement a contract modification can present a significant workload increase for our contracts department. We usually reserve contract modifications for when there is a change that involves money or a change in scope of the contract.

Al Kaniss
Naval Air Systems Command

> T&E is an enabling process. It is not a question of who does what, but a question of so what?—that is, once the test is done ... are we confident that the new capability will improve something for the warfighters?

tions of capability effectiveness and suitability. The conditions for test should replicate the joint mission environment and leverage distributed live, virtual, and constructive T&E capabilities to the maximum extent possible.

The *Defense Acquisition Guidebook* says that the milestone decision authority should designate the lead operational test agency to coordinate all operational test and evaluation. The lead operational test agency should produce a single operational effectiveness and suitability report for the program. (*DAG*, paragraph 11.1.2.2.)

Let's change the *DAG* to read, "The milestone decision authority should designate a responsible test organization to coordinate all test, evaluation, and certification activities. At the conclusion of each test activity, the responsible test organization should produce a single capability evaluation report for submission to the MDA, the Joint Staff (for interoperability certification), and the DAA (for information assurance certification)."

In the next round of updates to the DoD 5000, let's eliminate the rice bowls and focus on the capability being proposed for fielding to our warfighters.

Making Integrated Testing a Reality

Every test event should be considered a shared resource. Integrated testing is not just about early involvement; it's about sharing information to improve our understanding of capabilities and limitations. As a shared resource, every stakeholder should have some say in how the event is constructed so it satisfies some part of their needs. To be successful at integrated testing will require some non-traditional thinking and the breaking of those rice bowls. Moreover, integrated testing is not just a matter of saying it; we have to teach it, train it, demand it, plan it, and practice it. So let's get on with it.

The author welcomes comments and questions and can be contacted at steven.hutchison@disa.mil.

Call Me Sisyphus

Maj. Dan Ward, USAF

recently came across an article from *Air University Review* titled "Why Military Airplanes Cost So Much and What Can Be Done About It." The author is Air Force Maj. Frederick Stark (apparently no relation to billionaire industrialist Tony Stark of Iron Man fame).

Stark's article covers familiar ground, bemoaning excessive cost growth, endless schedule delays, and rampant complexity in the aircraft we acquire and in the bureaucracies responsible for acquiring them. He writes, "The cost of growth in military hardware is increasingly the subject of national

Ward, *currently a student at the Air Force Institute of Technology studying systems engineering, holds degrees in electrical engineering and engineering management. He is Level III certified in SPRDE and Level I in PM, T&E, and IT.*

debate. Critics of the Department of Defense cite massive cost overruns on major weapon programs, usually aircraft, as evidence of mismanagement and waste. ... We are currently paying eight times the cost per pound for fighter aircraft that we did in the 1940s. We are paying four or five times as much as we did in the 1950s. ... These are production costs. Development costs have grown even more."

Stark's article highlights one painful impact of cost growth, explaining that "as costs increase, we can afford to develop fewer new airplanes. This means that those we now have must stay in the inventory longer." The persistently shrinking F-22A fleet comes to mind, along with our critically aging tankers and F-15s. Stark goes on to point out "the way we procure aircraft has evolved into a very complex, institutionalized process," which is negatively affecting our defense posture. No doubt much the same can also be said for the other services and weapon systems.

These are familiar charges, and anyone who pays any attention to the DoD acquisition community has heard them before. In fact, Stark's article echoes many of the themes, principles, criticisms, and ideas found in the articles I have written over the past six years. As I read it, I felt as if I could have written it myself. But I didn't bring Stark's article up because he agrees with me so completely—I mention it because his article was published in 1973, the year I was born. The "new" aircraft he wrote about were the F-15 and the A-X, which we now know as the A-10.

Pardon me: I need a moment to compose myself.

Plus Ça Change …
I knew the DoD's cost, schedule, and complexity problems were long-standing, but to read a 36-year-old article that sounds as if it's describing today's situation triggered a minor existential crisis as I pondered the futility of trying to fix a problem that is so chronic and intractable. If the issues were clearly identified and enumerated in 1973, and if reasonable, feasible solutions were proposed to no avail, what the heck do I think I'm doing? What hope is there of ever making a difference?

In 1983, 10 years after Stark's article, reformer and "Pentagon maverick" Franklin Spinney was on the cover of *Time Magazine*. He had just briefed the Senate Armed Services Committee on the skyrocketing costs of defense technology development, reportedly over the objections of his boss, David Chu. Along with Air Force Col. John R. Boyd and a

handful of other reformers, Spinney was pushing to improve military technology development efforts. The so-called "fighter mafia" had succeeded wildly with the F-16 Falcon in the 1970s but sadly didn't seem to have much impact in the wider acquisition environment. In the 1981-1983 timeframe, as Spinney was briefing the Senate, DoD initiated the RAH-66 Comanche helicopter, the XM2001 Crusader artillery, and the A-12 Avenger jet. All three top-priority projects were cancelled after the expenditure of billions of dollars and many, many years (22 years in the case of the Comanche). That is precisely the kind of failure the reformers were trying to prevent. The top-priority F-22A Raptor and V-22 Osprey were also begun in that timeframe. Both became operational in 2005 after more than 20 years of development and carrying price tags billions of dollars higher than originally estimated. That, too, is an outcome the reformers were trying to prevent. Just as no one listened to Stark, it is not clear anyone really listened to Spinney—who was absolutely, prophetically right.

Writing in *Acquisition Review Quarterly* [predecessor of the *Defense Acquisition Review Journal*] a mere 11 years ago (Spring 1998), Dr. Lauren Holland joins the familiar refrain, pointing out that "despite 35 years of acquisition studies and reform initiatives, the same problems persist: Weapons cost too much, take too long to deploy, and do not perform as expected." These studies and reforms include the 1986 Packard Commission, the 1994 Federal Acquisition Streamlining Act, the 1990s Acquisition Reform movement, the "Lightning Bolt" initiatives, and several others. One year after Holland's article, David S. Christensen, David A. Searle, and Caisse Vickery published an analysis of the Packard Commission's impact on 269 contracts over an eight-year period (*ARQ*, Summer 1999). Their conclusion? After implementing the commission's recommendations, cost performance "worsened significantly." Ouch!

Plus C'est la Même Chose
If we use Holland's figure and add 11 to 35, we have now had 46 years—almost half a century—of reform. The chorus of reformers and critics is loud, prominent, persistent, and remarkably consistent. And still, acquisition outcomes continue to get worse. Ten years after Holland's assessment, the Government Accountability Office's March 2008 report (GAO-09-467SP: Assessment of Selected Weapon Programs) bluntly states "cost and schedule outcomes for major weapon programs are not improving over the 6 years we have been issuing this report," despite the fact that "DoD's planned investment for new weapon systems

> The chorus of reformers and critics is loud, prominent, persistent, remarkably consistent— and remarkably consistently ignored. Acquisition outcomes continue to get worse.

now reflects the highest funding levels in two decades." Also in 2008, the Air Force Studies Board echoed the GAO's assessment, pointing out "the time required to execute large, government-sponsored systems development programs has more than doubled over the past 30 years, and the cost growth has been at least as great." I could go on, but I can't bear it.

Naturally, any given reform effort can point to anecdotal evidence of individual success stories. However, when we examine the overall trend, as the GAO has done for six years in a row, it is obvious things are continuing to get worse, not better. Perhaps, as Holland observed, it is because "reforms must be implemented by groups of individuals who have a vested stake in the status quo." Whatever the reason, it really is a shame.

The worst part is that we used to be good at this stuff. Once upon a time, DoD could roll out cutting-edge, world-class technology on a small budget and to a tight schedule. Writing in *Air Power Journal* in 2002, Air Force Lt. Col. Steven Suddarth points out that we started our intercontinental ballistic missile program in 1955, and "developed three generations of systems (an improved Atlas, Titan and the solid-fueled Minuteman) in a mere seven years. ... Capabilities that no one thought possible at the beginning of the period became operationally routine by the end." Three generations in seven years? Transforming the impossible into the routine? Amazing, particularly considering it literally was rocket science. How far we've fallen.

In what he calls the "Great Air Force Systems Irony," Suddarth observes, "The Air Force has moved from the simple management of complex systems to the complex management of simple systems—and has gained little in the process." The other Services do not appear to be faring any better. Suddarth goes on to critique the "widespread belief ... that 'better management' would solve the problem. 'Better management' had a tendency to be translated into 'more management' with an accompanying increase in rigidity, delay and the suppression of initiative." Interestingly, those aren't Suddarth's own words. He's quoting John Bennett's doctoral dissertation (The George Washington University)—from 1974!

So, we've had an inkling for several decades now that attempting to fix things through "better" (i.e., more) management actually ends up causing more damage than it repairs. It slows things down. It ossifies minds, increases costs, removes genuine accountability, and stifles initiative—all without making weapons systems any better. There might be a good reason for adding each specific layer of management and oversight, but there is no good reason for having all of them. That is, each additional official reform requirement might have made tactical sense when it was introduced, but taken as a whole, they do not support the overall strategy of improved acquisition outcomes. The cure ends up exacerbating the disease.

All too many official reform efforts fall into this "subtraction-through-addition" category, applying ever-increasing burdens on technology developers without conveying actual value. These approaches are deceptively rational, yet they fail to deliver the promised benefits. Meanwhile, unofficial efforts like Stark's or Spinney's never quite get the traction necessary to introduce a large-scale effect and must settle for occasional, individual successes, which are seldom (if ever) repeated.

The history of defense technology development reform is painful to study. It's enough to make a guy want to find a different line of work, preferably one where there is some possibility of making a difference. Fortunately, I am stubborn and am quite willing to follow Winston Churchill's advice to "fight when there is no hope of victory." I explained this position in a June 2006 online article titled *The Joy of Sisyphus*, writing "Problems like poverty, crime, disease, war, and bureaucracy will in all likelihood never be solved. But it is good to fight against them nonetheless. ... There is something glorious about engaging in a hopeless battle against a powerful evil that you have no reasonable hope of conquering. ... Failure may be inevitable, but giving up is not an option."

When it comes to meaningful large-scale reform, failure may indeed be inevitable. Given the actual historical trends and outcomes of reform efforts over the past 46 years, I am tempted to conclude the acquisition system is fatally flawed and beyond reform. I wish someone would prove me wrong, but that's what the data indicate. History seems to show that the best we can hope for is to occasionally succeed in spite of the system, when subversive little pockets of revolutionary acquisition guerillas produce weapons like the F-16 or the F-117 over howls of protest by the establishment and the status quo defenders.

The problem is not a lack of intellect or power. Nearly five decades of official reformers were all bright, experienced, highly placed men and women. They understood this business far better than I ever will and, for the most part, had more authority than I could dream of. There was no shortage of brains or clout. There was simply a shortage of correct answers. As far as I can tell, the system has not been fixed because we, as a society, lack the courage, integrity, fortitude, and imagination necessary to fix it. That is, we lack the will to do what needs to be done. The answers are out there if we have the nerve to reject simplistic, complicated, wrong-headed, rationalized, tactical bandages that look better on paper than they do in reality and get people promoted and/or elected, and instead pursue strategic approaches that work in reality and just might get some people fired.

Stop Pushing the Boulder Uphill

Since more than 46 years of reasonable, intelligent-sounding solutions have failed, perhaps it is time to try some unreasonable solutions. Maybe it is time to acknowledge our persistent organizational failures and scrap all the requirements, regulations, policies, and procedures and get back to something more basic and human. Crazy? Perhaps, but rational hasn't exactly delivered so far, has it? What has delivered? Unofficial reform efforts, led by talented and driven technologists who mange to outflank the official Powers That Be (and usually get crushed in the process).

What if we started all over again with a blank sheet of paper and instituted only the bare minimum of requirements? Or what if we tried to do without them entirely, opening the floodgates to experimentation and discovery? Would acquisition outcomes be any worse than they are today? Remember, we are currently at the bottom of a 46-year decline. Yes, it is possible to make things worse than they are. If we keep doing what we are doing, history tells us we can certainly expect the negative trend to continue. I suspect improvements will require reversing our behavior, decreasing management and formality rather than continuing to increase them.

What if we replaced our current hierarchal pyramid organizational structure with what Gordon MacKenzie (author of *Orbiting the Giant Hairball: A Corporate Fool's Guide to Surviving with Grace*) calls a "plum tree structure" and looked at acquisition organizations as living entities that produce "fruit" instead of timeless, immovable tombs (which is what pyramids are)? What if we imitated the successful unofficial reformers—people like Stark, Spinney, and Boyd—instead of following in the path of failed official reformers? To return to a common theme in my own articles, what if we built a system that relied on trust, initiative, and talent instead of oversight, standardization, and process?

Ricardo Semler did this in his company, Semco, implementing a talent-based industrial democracy in which the counterproductive rule books and unhelpful requirement binders were tossed out of the windows, and capable, dedicated people were allowed to work together and apply their abilities to the tasks at hand. Many other companies around the world, including Toyota, use this approach to great effect, rejecting the fatally flawed Theory X scientific management and Taylorisms [*Frederick Taylor's scientific management principles, developed at the end of the 19th century*] which are, inexplicably, still in vogue in today's DoD, despite their demonstrable and well-documented shortcomings.

Special Operations Command and some classified black-world programs supposedly use a slightly streamlined approach to acquisitions, with a tad less oversight, one or two fewer reporting requirements, and a little more autonomy. Their outcomes are not worse than the traditional, white-world approach. In fact, dollar per pound, their outcomes are often faster, simpler, and better. Perhaps everyone should be allowed to acquire things that way. Using their methods would be grossly inadequate as a final solution, but it might be a good first step. I seriously doubt it could make things worse.

Things have been bad for a long time, and they are not getting better. Almost half a century of official reform efforts have only aggravated the situation, while successful unofficial efforts tend to get ignored, denied, or punished rather than lauded or repeated. Isn't it time we changed course? Isn't it time to return to "the simple management of complex systems," in the words of Suddarth? Can we find the courage, integrity, and self-sacrificial strength required to strip out the complexity, the delay, and the excessive costs inherent in current programs? Are we willing to honestly assess the stomach-churning history of acquisition reform and face the fact that it has consistently and spectacularly failed? Who will be allowed to state those facts out loud?

As I write these words, the 2008 presidential election is still more than a month away. I have no idea who will be commander in chief by the time this article is published in January 2009, but both candidates campaigned on a platform of change. Perhaps this is a window of opportunity. Perhaps the time is right for real change in the DoD acquisition community. Perhaps a new administration, with fresh eyes and a mandate for change, will seize the opportunity to do what 46 years of reformers have been unable to do. Or maybe a small band of acquisition guerillas will finally break through and produce the kind of sustained revolutionary change we need. One can only hope.

Somewhere in America, a baby is being born. He or she will grow up, get a degree in engineering, and join the U.S. military. Thirty-five years from now, when I am 70 years old and long-since retired, he or she will be a major and may come across one or two of my articles. I dearly hope there won't be a need for that future major to write an article like this one. I dearly hope this generation can find the courage, integrity, strength, imagination, and will to change the course of history. But if you are reading this in 2044 and things are still bad, all I can say is, "I'm sorry, good luck, and keep fighting."

Editor's note: In Greek mythology, Sisyphus was condemned to an eternity of punishment in Hades that consisted of rolling a huge boulder to the top of a hill, watching it roll back to the bottom, and starting over.

New Career Path Recognizes Global Scope of Acquisitions

International Acquisition Career Path

Duane Tripp ▪ *Roy Wood*

nternational cooperation in defense acquisition programs is an important but complex undertaking. Done well, international cooperation can help spread the cost and risk of developing complex defense systems across several nations; it can allow access to the best technology worldwide; it can ensure interoperability between allied and coalition warfighters; and it can improve understanding and strengthen ties with U.S. allies. International cooperation, however, requires training in order to navigate a complicated and often confusing web of legal and regulatory requirements and processes. Transfer of defense technology between international partners invokes arms and technology transfers subject to export control laws, and they often require permission from the U.S. State Department. Sharing dual-use technologies can involve obtaining Department of Commerce approval. Even technical discussions among allies must be covered by appropriate legally binding agreements or other authorizations.

Tripp is a retired U.S. Air Force pilot and acquisition professional, DAU's director of international programs, and program director for the International Acquisition Career Path. Wood is the dean of DAU's School of Program Managers. He is a former assistant deputy under secretary of defense and retired Navy engineering duty officer.

How, then, can the defense acquisition workforce navigate the maze of legal and regulatory requirements to support the international cooperation priorities set by our national leadership? What organizational support and training exist to equip the workforce to meet those requirements? The department's record suggests we haven't yet fully overcome these hurdles and realized the goal of achieving robust international cooperation in many of our major programs, but now things are changing.

A Missing Requirement

The 1990 Defense Acquisition Workforce Improvement Act required DoD to designate acquisition positions that specifically considered 11 functional areas. Since enactment, DAWIA formal career fields and paths have been identified or have evolved for those functional areas in terms of the education, training, and experience necessary for acquisition career progression. "Joint development and production with other government agencies and foreign countries" is one of the 11 functional areas cited in the law. Within DoD, this functional area is commonly referred to as international acquisition. Unfortunately, for 17 years, no career field or career path was established to address this functional area. The area of international acquisition has subsequently been problematic in regards to establishing education, training, career development, and certification standards.

The strength of DAWIA was based, in part, on identifying and developing specific training curricula based on the idea of needed competencies. A competency is a statement that conveys a knowledge, skill, or ability necessary along with a desired level of proficiency for a particular job. There are many competencies that make up a career field or path, and they can be expressed in levels I, II, and III to synchronize with DAWIA certification desires. None existed for international acquisition.

DoD further assigned the military departments the task of managing the people and positions in the defense acquisition workforce to meet DAWIA standards. The military departments and the 4th estate defense acquisition career managers (DACMs) ensure people are trained and certified under the statutory guidelines. Without a career field or path, there was no need to identify what competencies were needed. Without such competencies, there were no clear guidelines on how to design the most effective training. And because there was no career field or path for international acquisition, there was no need for DACMs to manage training. DACMs had no guidance on whom they should manage, or to what standards. This unintended domino effect of problems created barriers to providing the training tools that the international acquisition portion of the defense acquisition workforce needed.

In June 2007, the under secretary of defense for acquisition, technology and logistics (USD[AT&L]) directed the development of a new international acquisition career path (IACP).

Tailored international competencies within the career fields will be identified and appropriate training developed and deployed. The structure of the career path aligns the complexity of working in the international environment within the context of the acquisition workforce primary functional disciplines.

Deployment of the IACP

As an initial step, the IACP was developed and deployed within the program management career field. The path will eventually supplement other DAWIA functional acquisition career fields. An integrated process team identified the appropriate international competencies necessary for program managers to perform effectively within an international program environment, and to develop the training requirements for the new career path option. The IPT included representation from offices from the USD(AT&L), Army, Navy, and Air Force, as well as the Missile Defense Agency, the Defense Technology Security Administration, the Defense Security Cooperation Agency, the Defense Institute of Security Assistance Management, and the Defense Acquisition University. The IPT also forms the core of an ongoing working group supporting the USD(AT&L) director for international cooperation, who is the functional leader for the new career path and is responsible for its implementation.

> **How can the defense acquisition workforce navigate the maze of legal and regulatory requirements to support the international cooperation priorities set by our national leadership? What organizational support and training exist to equip the workforce to meet those requirements?**

> **The expanded IACP will provide improved training and development that will enable and empower the entire acquisition workforce to become more knowledgeable of various processes and to understand the implications for international programs.**

International competencies for the program management career field are listed in the table on the following page. Those program management competencies apply to both the international armaments cooperation (IAC) as well as the security assistance (including foreign military sales) environments. A numbering protocol applies to these competencies. Competencies beginning with 1 apply to the international acquisition environment, with 2 apply to strategy and planning for international involvement, and with 3 concern international business processes and tools.

IACP Applicability

Current guidelines require that the international acquisition career path apply to acquisition workforce personnel in the program management career field who provide support to international acquisition programs and technology projects in which more than 50 percent of the work is international-related. International-related applies to:

- A program that has been designated by the USD(AT&L) or a component acquisition executive as an international program or one that has high-potential for future foreign military sales or international direct commercial sales
- A program whose technology development strategy or acquisition strategy has identified a potential international system or cooperative opportunity
- An existing program with an international agreement pending or in force
- A program associated with an international sale, lease, or logistics support involving U.S. defense equipment.

The above criteria are the guidelines for a survey that is being conducted over the next several months to more accurately characterize the numbers and positions of people in the international acquisition career path.

DAU IACP Training

The new program management IACP has three levels of international training courses offered at DAU. The 2009 DAU catalog, available at <www.dau.mil>, contains the additional course training requirements for the program management IACP for certification at the entry level (I), intermediate level (II), and advanced level (III).

At Level I, three online training modules are required: International Armaments Cooperation Parts 1, 2, and 3. Each of those self-paced modules is approximately two hours in length. The modules introduce the history and functioning of IAC. The modules have been revised to reflect changes related to the Sept. 11, 2001, terrorist attacks and their impact on international acquisition cooperation. The modules specifically address the Office of the Secretary of Defense and DoD component reorganizations that streamline the development and execution of IAC and provide updated information on the multilateral and bilateral forums and bodies that promote IAC.

Level II training requires the completion of two additional two-hour online modules and two one-week residency courses. The first online module is the Information Exchange Program-DoD Generic for Research Development Test and Evaluation, which explains the information exchange program, why it should be used, and how the workforce can execute information exchanges responsibly. It is supplemented by Army- and Navy-specific modules. The second online module is Technology Transfer and Export Control Fundamentals, which explains the fundamentals of technology transfer, export control, and international security and program protection. The first residency course, the Multinational Program Management Course (PMT 202), describes the roles and responsibilities of the acquisition workforce, government agencies (including the State Department and DoD), and foreign governments in international cooperative development and security assistance. It also describes the agreements that support U.S. international cooperation policy.

One specific requirement has been mandatory since 1999 by the deputy secretary of defense's direction, which states "All DoD personnel responsible for negotiating, overseeing, managing, executing, or otherwise participating in international activities shall successfully complete" the International Program Security Requirements Course offered by the Deputy to the Under Secretary of Defense (Policy) for Policy Support or the International Programs Security and Technology Transfer Course (commonly called the International Security and Technology Transfer/Control Course) taught by the Defense Systems Management College.

International Acquisition Career Field Competencies

Level I Competencies

1.1 - Identify statutory, regulatory, and policy requirements

1.2 - Identify stakeholders

1.3 - Describe international program security and technology transfer procedures

2.1 - Differentiate between a United States and an international strategy

2.2 - Identify international elements of technology development and acquisition strategies

2.3 - Outline proper international technology security considerations

3.1 - Describe Pol-Mil principles as part of customer/partner relationships

3.2 - Describe international acquisition management tools

Level II Competencies

1.1 - Identify and apply statutory, regulatory, and policy requirements

1.2 - Identify and coordinate with stakeholders to determine common positions

1.3 - Use international program security and technology transfer procedures

2.1 - Plan an international strategy—both cooperative and security assistance

2.2 - Plan and modify technology development and acquisition strategies to incorporate international considerations

2.3 - Employ proper international technology security

3.1 - Apply Pol-Mil principles to customer/partner relationships leading to signed letters of offer and acceptance or international agreements

3.2 - Categorize the technical capabilities of your customer/partner

3.3 - Support international agreement negotiation

3.4 - Identify international program contracting impacts

3.5 - Develop funding strategies for international programs

3.6 - Employ international acquisition management tools

Level III Competencies

1.1 - Assess and integrate statutory, regulatory, and policy requirements

1.2 - Organize and blend stakeholders' needs and requirements

1.3 - Recommend, justify, and defend international program security and technology transfer procedures

2.1 - Formulate an international strategy—both cooperative and security assistance

2.2 - Critique and recommend technology development and acquisition strategies to incorporate international considerations

2.3 - Employ and validate proper international technology security

3.1 - Integrate Pol-Mil principles into customer/partner relationships

3.2 - Assess and evaluate the technical capabilities of your customer/partner

3.3 - Conduct international agreement negotiation

3.4 - Select and evaluate international acquisition management processes

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The International Security and Technology Transfer/Control Course (PMT 203) describes the various laws, policies, and processes necessary to develop system and contractor classification and guidance for the control of critical program information. The course also describes national security policy issues and export/import licensing constraints (as defined by the departments of State, Commerce, Treasury, and Customs).

International program management Level III requires completion of a one-week residency course, the Advanced International Management Workshop (PMT 304). This course prepares professionals to participate effectively in the development and negotiation of defense armaments cooperation agreements ranging from simple data exchange agreements to complex cooperative development, production, and support agreements.

It is important to note that these mandatory courses for the IACP are in addition to all existing training requirements for the program management career field. However, the total IACP addition to the existing training requirement for the career field represents only 10 hours of online training and three weeks of resident training to attain IACP Level III competency.

Adapting IACP into Other Career Fields

The program management IACP is just the first step in addressing international acquisition across DoD. The long-term objective is to assess the competency requirements and training needs within the remaining acquisition career fields and determine, in concert with the career field functional leaders, specifically which career fields would benefit from a tailored IACP. In September 2008, the USD(AT&L) added an initiative to his *Strategic Goals Implementation Plan*—Strategic Thrust #3, which is to "take care of our people" by creating the future acquisition workforce. Part of that plan is to define IACPs and training requirements for other career fields.

When complete, the expanded IACP will provide improved training and development that will enable and empower the entire acquisition workforce to become more knowledgeable of various processes and to understand the implications for international programs. The direction and structure is in place to implement the new career path, and elements will evolve over time as the needs of international acquisition career path professionals are refined. The international acquisition career path is a step forward in improving acquisition outcomes and meeting the policy intent of greater cooperation with key allies. In the end, effectively sharing the burden and benefits of defense development efforts with international partners will benefit the American taxpayer as well as U.S., allied, and coalition warfighters.

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Capability Test Methodology and Joint

Testing the Test

Steven Hutchison ▪ *Max Lorenzo* ▪ *Dan Bryan*

An important event for the testing and acquisition communities took place Aug. 4 to 8, 2008. The Joint Test and Evaluation Methodology, a chartered joint test and evaluation (T&E) project, conducted a test in conjunction with the Joint Battlespace Dynamic Deconfliction event, held by the Combined Test Organization for Future Combat Systems (FCS). JBD2 served as a "use case" to evaluate the effectiveness and suitability of the JTEM-developed capability test methodology.

JTEM was directed to develop, test, and evaluate methods and processes for defining and using a live, virtual, and constructive distributed environment (LVC-DE) to evaluate system of systems performance and to understand system contributions as they pertain to joint mission effectiveness. JTEM's entire CTM methods and processes, specifically the CTM measures framework, were utilized for the first time within JBD2 to demonstrate how to accomplish system of systems testing. This use of the CTM allowed testers to evaluate system of systems and the contribution of specific systems through the measures framework levels of evaluation—joint mission, joint task, and system/system of systems attribute levels. It also served as a successful proof of concept for the validation of new systems and system of systems testing methods and processes that enable comprehensive evaluation of joint capabilities.

The CTM is a formalization of existing test processes, with refinement, for designing a test of new capabilities or system of systems in a complex joint environment. The CTM is designed to augment, not replace, existing test and evaluation methods and processes, and it takes into account the unique aspects of testing joint, networked systems in a LVC-DE. Before we discuss the test, some background information is needed to understand the significance of the event.

Improving the Testing Process

Over the past several years, the Department of Defense has initiated several steps to make changes to the testing and acquisition processes that enable testing of joint capabilities in an operationally realistic joint mission environment. As DoD moves away from traditional single-system T&E approaches to the more complex system of systems approaches, the department must be able to demonstrate that future systems are fully integrated, fully interoperable, and able to meet the complexities and demands of future battlespace environments.

DoD testing and acquisition instructions are being reviewed to include changes that declare the need to test joint capabilities in a joint mission environment. The Joint Capabilities Integration and Development System (JCIDS) institutes a capabilities-based approach to identifying current and future gaps in DoD's ability to carry out joint warfighting missions and functions. In support of these policy directives, the DoD director for operational test and evaluation developed the Testing in a Joint Environment Roadmap as a call for action to establish a framework for life cycle evaluation of systems and system of systems in a joint mission environment, and to institutionalize evaluation in a joint operational context. The roadmap aims to place testing in a joint environment and joint interoperability testing at the core of T&E activity while promoting changes in how DoD does business in the areas of policy, infrastructure, and methods and processes. Policy changes are being driven through the roadmap governing

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Battlespace Dynamic Deconfliction

As testing in the joint environment continues to require more of the T&E community, the capability test methodology will ensure that we test with relevance.

body and through established DoD processes. Infrastructure networks and middleware issues are being addressed through the Joint Mission Environment Test Capability (JMETC) program under the Test Resource Management Center, a field activity reporting to the Office of the Under Secretary of Defense for Acquisition, Technology and Logistics. The JTEM joint test and evaluation project, chartered by the DoD director for operational test and evaluation in February 2006, is addressing methods and processes for evaluating capabilities in the joint environment. The August 2008 test event was part of the JTEM project.

Developing CTM Version 3.0

For the past two years, JTEM developed, tested, and evaluated methods and processes for defining and using an LVC-DE to evaluate system of systems performance and joint mission effectiveness. Before August 2008, JTEM conducted rock drills, a gap analysis, and a test event to gather

feedback on its CTM development, leading to the release of CTM version 2.0 for the JBD2 test event. The FCS Combined Test Organization planned the JBD2 event to establish a rigorous test context that would allow the test participants to examine FCS test technology requirements needed for testing in a joint environment in support of acquisition milestone test activities. JTEM leveraged the event to test and evaluate CTM methods and processes when used by a typical test organization under operationally realistic conditions. For JTEM, the test article was the CTM. Results gathered throughout the planning, execution, and post-execution phases of JBD2-provided areas for CTM improvement to be incorporated into CTM version 3.0, scheduled for release at the conclusion of the JTEM joint T&E project in April 2009.

Mutual Benefits

FCS and JTEM formed a natural partnership for the August 2008 test event. FCS leaders recognized the event presented challenges requiring new testing capabilities (system of systems on a large scale; move, shoot, and communicate simultaneously; seamless integration with joint elements for network-centric operations). To accommodate this new complexity, DoD strategic planning guidance demanded creation of a joint environment testing capability. As pointed out earlier, this DoD-level requirement led to the creation of JMETC and JTEM as part of the larger testing in a joint environment initiative. As the FCS testing strategy matured along with JTEM, a mutually beneficial relationship emerged and grew into the JBD2 partnership. JTEM understood JBD2 would provide the opportunity to:

- Identify issues in integrating the end-to-end CTM into existing test activities
- Develop and mature the LVC-DE
- Investigate data requirements issues
- Identify deficiencies in implementation of the live, virtual, and constructive joint mission environment.

FCS saw the partnership with JTEM as a way to establish a rigorous test context in which to examine FCS test technology requirements needed for testing in a joint environment in support of Milestone C test activities, as well as enable risk reduction for critical FCS technology areas. Equally important, JMETC used JBD2 as an opportunity to characterize the network infrastructure and mature the baseline capability required to support system of systems-level testing across the DoD components. Overall, JBD2 provided a requirement for a high-fidelity, real-time, rapidly configurable, distributed network connecting virtual and constructive models with live systems. This architecture offered the participating organizations an opportunity to test selected initiatives in an operational environment, enhancing the overall joint context of the test while allowing stakeholders to investigate these important new technologies. At the same time, participation in the test event provided the JTEM test team close-in visibility on implementation of the CTM in a joint mission environment. The overarching test goals were:

- Evaluate the effectiveness and suitability of the JTEM CTM
- Test the FCS network, technologies, and distributed environment for use in future tests for acquisition milestone decisions
- Mature the JMETC baseline capability to support system of systems-level testing across the Services.

A Complex Test Scenario

To achieve these goals, JBD2 established a complex joint mission environment composed of 16 test sites and more than 40 unique live, virtual, and constructive systems connected across four time zones. These test sites represented all four Services and the U.S. Joint Forces Command. Of these 16 JBD2 sites, 10 were reused from two previous test venues that were a part of a series of events culminating in JBD2. Seven Service and joint initiatives were included as part of the test architecture. JBD2 truly provided joint context and stressed the boundaries of a live, virtual, and constructive joint mission environment.

The JBD2 test scenario focused on the complex and dynamic battlespace deconfliction problem. The joint mission environment centered on this problem, with mission tasks selected that would require complete coordination of the Services to execute. Four unique Joint Fires and two Joint Close Air Support key mission tasks were agreed upon in order to fully stress the notional joint air ground system of systems (JAGS) under test. The scenario design called for these mission tasks to occur simultaneously and/or sequentially as the battle unfolded alongside organic fires-and-effects missions and air operations. Test design factorials incorporating materiel and non-materiel solutions were developed that required four unique test configurations for every key mission task. A "free play" environment was established in which any number of key mission task types could execute in parallel for a single test configuration.

DoD testing and acquisition instructions are being reviewed to include changes that declare the need to test joint capabilities in a joint mission environment.

As the JBD2 test scenario unfolded and the key mission tasks were executed, JTEM's CTM measures framework was implemented, which enabled critical test data to be collected. The data permitted evaluation of the notional JAGS not only at the attribute level but also at the joint task, joint mission desired effect, and joint mission end state/objectives levels, thus effectively describing whether or not JAGS, as a joint capability, provided the means and ways to perform a set of tasks to achieve the set of desired effects that lead to mission success. However, for JBD2 the notional JAGS test data was not the JTEM focus. JTEM's focus was on the effectiveness and suitability of the CTM to collect the right data and evaluate it up to the mission measure of effectiveness level.

A Successful Test Event

JBD2 was a major success in several ways. JTEM's CTM was fully exercised within a test environment possessing a level of complexity not seen in previous test events. The number of test sites connected, along with the number of systems represented, is extraordinary given the planning process was completed in less than one year. Additionally, the level of effort and use of the CTM were significant given the test team's short timeframe for planning and executing the test event. Reusability of previous JTEM test products and processes—Joint Fires mission threads, the JMETC virtual private network, DoD Architecture Framework products, and CTM products—exceeded expectations. Data collection and reduction were conducted at a speed, accuracy, and fidelity that set new standards for distributed testing. Eighty percent of the measures framework metrics was collected and reduced within a week of the test event. Data for all key mission task measures of effectiveness, task measures of performance, and measures of system of systems attributes were collected and reduced within a month of test execution completion.

JBD2 was clearly a successful proof of concept in collecting data and evaluating mission measures of effectiveness, according to JTEM's CTM measures framework. The data showed the impact of system of systems configurations on mission-desired effect and joint mission effectiveness. This

is a significant milestone because testers can now move forward in their attempts to institutionalize testing in a joint mission environment across DoD.

From JTEM's perspective, JBD2 execution of CTM products was more than sufficient to assess the effectiveness and suitability of the CTM. The significant lessons learned from the test event were of great value to the JTEM test team as the team enhances its methods and processes and incorporates improvements into CTM version 3.0. About two-thirds of the CTM products produced during the test aligned completely or partially with the CTM guides and model descriptions. Additionally, the JBD2 test team developed several test products that were outside the domain of the CTM. JTEM is carefully considering these test products for inclusion in CTM version 3.0.

Insights on Improvement

JBD2 provided several insights that the test team could use in CTM development or in recommendations for improvements to current test and acquisition practices. A high-level summary of these insights finds:

- More focus should be spent on defining and documenting a coherent evaluation strategy and joint mission effectiveness requirements. A preponderance of early test activities and resources are devoted to environment design and build. Focusing first on the evaluation strategy will reduce the expenditure of resources at execution time.
- There is a need for a standard lexicon for conducting T&E in an LVC-DE.
- JCIDS products are not yet sufficiently available to effectively create the joint operational context for a test.
- There is a need for data standardization and improved data access and retrieval methods.
- There is a need for enterprise-level support, expertise, and coordination in order to effectively test in a joint mission environment.

CTM Handbooks

Along with these insights, more detailed and specific improvements to the CTM have been captured by the JTEM team as a result of CTM usage in JBD2. These improvements will be included in CTM version 3.0, which will contain a CTM disc with navigation slide and three publications:

- The *Action Officer Handbook for Testing in a Joint Environment*
- The *Program Management Handbook for Testing in a Joint Environment*
- The *Joint Mission Effectiveness Analysis Handbook*

These publications incorporate CTM guides that provide a roadmap and context to methods and processes for testing in a joint environment.

The *Action Officer Handbook*, written for typical test and event planning staffs, will address concepts supporting testing in a joint environment and will contain comprehensive CTM user guides for each step of the CTM process, printable checklist extracts to be used along with the CTM guides, and annexes containing useful information such as the CTM lexicon. The *Program Management Handbook* will be an executive-level publication providing an enterprise view of DoD acquisition transformation, addressing testing in a joint environment, and offering an overview of the CTM for program and capability portfolio managers. The *Analysis Handbook*, written for test planners and test analysts, will provide the framework and supporting information for the CTM evaluation thread process and will offer recommended analysis tools and techniques as well as annexes with supporting information and hyperlinks between sections for online use. That CTM package will prepare the program manager and test organization staff to effectively test as the capabilities-based approach to acquisition requires.

Promising Results

JBD2 provided the opportunity to identify issues in integrating the end-to-end CTM into an existing test activity, and it allowed the T&E community to gain a better understanding of what is required to fully realize a sufficient capability to test in a joint mission environment. The results are promising and indicate the CTM:

- Reduces cycle time for capability development and testing
- Increases the speed of data collection, reduction, analysis, and evaluation
- Integrates developmental and operational testing
- Provides a needed operational evaluation framework from which to test system of systems in a joint mission environment.

There is still more work to be done. In the near future, CTM version 3.0 must be integrated into existing test processes within the acquisition community in a real test event to inform an acquisition decision. This will further validate the CTM and provide valuable lessons learned for its improvement. This action will also serve to operationalize the CTM, providing a springboard for the CTM to be institutionalized as the methods and processes of choice for testing in a joint mission environment.

The CTM promises to improve how we test and acquire joint capabilities. This promise will not be fulfilled unless we all support the CTM as a means of providing improved T&E of joint capabilities. As testing in the joint environment continues to provide more challenges for the T&E community, the CTM will ensure that we test with relevance, thus supporting the acquisition and delivery of "plug and fight" joint warfighting capabilities.

The authors welcome questions and comments and can be contacted at steven.hutchison@disa.mil, max.lorenzo@jte.osd.mil, and daniel.bryan@jte.osd.mil.

"Customer Pay" Program Pays Off

Pentagon, Army, and Industry Program Reduces Costs in Rebuilding Military Trucks

Denise Richards

Wars eat machinery, and the military vehicles returning stateside after hard duty in Iraq and Afghanistan show severe bite marks. Battle damage, transmissions worn by constant heavy use, cooling systems strained by desert heat, and springs and axles stressed by heavy payloads and armor take their toll. While industry organizations have responded by producing new vehicles in record numbers, the military also wants to make use of older, existing vehicles for training, readiness, and other domestic missions.

Meeting these multiple demands means that in addition to buying new trucks, the military must refurbish and rebuild the trucks that return from the battlefield. Fortunately, a pilot program designed to combine the best features of government logistical expertise and private industry's knowledge of inventory management and just-in-time delivery has set a new standard for speed

Richards, who holds an executive MBA from Notre Dame University, has been a member of the AM General team for more than 20 years.

and quality in the rebuilding of thousands of the Army's high-mobility multipurpose wheeled vehicles—the famous HMMWV, or Humvee.

Dubbed "Customer Pay"—a reference to the procedure in which the government (the customer) pays the contractor only when a part is delivered to a military assembly line—the program has teamed the Defense Logistics Agency (DLA), the Army's Tank-Automotive and Armaments Command (TACOM), and three military maintenance depots with Humvee manufacturer AM General to streamline the production of remanufactured vehicles.

"Nobody had ever done it before. We designed, developed and implemented this in six to nine months," said Pat Dempsey-Klott, a TACOM executive who played the key role in initial development of the program.

The Customer Pay System

Under Customer Pay, AM General, not the government, takes responsibility for getting the right number of parts to military depot assembly lines at the right time so that refurbished and rebuilt Humvees come off the line 100 percent complete—something that was not always the case under the old system. While this may seem a simple enough task, it is an extraordinarily complex industrial enterprise. In fact, it can be more complex than managing the flow of parts required for new vehicles. For unlike new production, each Humvee returning from duty has a different set of parts needs. While some parts replacements are mandatory, most of the parts that need to be replaced on Humvees vary depending on the widely varying condition of the battle-weary vehicles when they come in.

To grasp the nature of Customer Pay, it is important to visualize what is happening at the Letterkenny Army

Depot in Chambersburg, Pa.; Red River Army Depot in Texarkana, Texas; and, on a smaller scale, the Maine Military Authority in Limestone, Maine. Those locations are not mere repair bays where damaged vehicles come in for an overhaul. The depots are involved in full-up vehicle remanufacturing that has much more in common with an automotive assembly line than with a maintenance shop. Incoming Humvees are stripped down to the frames. Parts that can be reused are cleaned and refurbished while new parts queue up for assembly. The queuing process is where Customer Pay comes in.

When You Need a Whole Truck

Before Customer Pay began as a pilot program in January 2006, the military depots were struggling with the high volumes of work brought on by wars in Iraq and Afghanistan. Too many vehicles were coming off the line "G-coded," meaning they were missing parts and could not be accepted back into the military inventory. Production line stoppages due to incomplete vehicles were becoming a daily problem, at one point creating a backlog of some 1,300 trucks that had to be sent through the line a second time, according to information provided by John R. Gray, Letterkenny's deputy commander.

"Just imagine you have a factory making Toyotas, and it runs out of seats for about three hours, and the line keeps going. Then maybe it's seat-belts or the glove-box doors," Gray explained. "Pretty soon, you have a whole field missing two to 20 parts, but they're not all the same parts."

As Mark Whalen, AM General vice president for service parts logistics operations, put it, "ninety-five percent [of a truck] when you need a whole truck doesn't work."

In some cases, installing the missing part required taking a truck apart, to some degree, to get at the problem area. The solution most immediately available to the government was boosting its parts inventory at depot warehouses. That decreased the chances of problems arising on the line, but sharply increased costs as the overhead associated with remanufacturing the trucks spiked.

A Solution Pays Off

Developed in cooperation with the Army and depots by the DLA's Defense Supply Center Columbus, Customer Pay responded to the problem by turning over the entire management of parts supply to AM General.

"Customer Pay is a collective effort of government and industry partners dedicated to achieving excellence in Army recapitalization of the HMMWV weapon system," said Brig. Gen. Patricia E. McQuistion, commander of Defense Supply Center Columbus. The key to Customer Pay's success, she said, lies in "the flexibility provided by having both a commercial and a government supply chain available to back up each other." Second, she added, is the "cooperation and intense dedication" of the government/industry team. "These two factors provide nearly seamless support, at significantly reduced costs."

An Industry and Government Partnership

At its South Bend, Ind., headquarters; its Mishawaka, Ind., assembly plant; and its engineering center in Livonia, Mich., AM General employees had extensive expertise in just this sort of inventory management problem.

The company developed a transparent system of inventory management. AM General would be responsible for some parts through its huge network of suppliers, such as General Engine Products, which is the maker of the Humvee engine. DLA and TACOM would supply other parts. AM General chose subcontractor W.W. Williams for the task of transporting parts and partial assemblies from depot warehouses to the assembly floor in the proper sequence.

The system requires AM General to find the lowest available price, which might, at times, mean using government inventory rather than buying from subcontractors. And if for some reason one responsible supplier runs short of a needed part, the Customer Pay system enables AM General to move easily to other options. In that way, the key participants—AM General, DLA, and TACOM—backed each other up in supporting the flow of parts to the line.

AM General partnered with the government to drastically reduce inventory. The result was performance-based logistics to the nth-degree, in which the company does not get paid until it delivers the parts to the line.

The Need for Flexibility

The hard part lies in forecasting what the company calls "average daily use" of certain parts on the line. While some parts such as drive train and suspension must be replaced, greatly simplifying planning, others are replaced as needed. These are what AM General calls "unpredictable parts." Some of these calculations require deep knowledge of ongoing operations. Here, AM General's connections to the warfighter through the various acquisition and supply commands—connections that help the company understand what is happening to Humvees in the field—are critical.

Parts needs on the line vary from week to week. In 2007, the logistics operations saw a sudden need for body and frame parts because of the kind of damage the two wars were inflicting on the trucks. That type of damage increased the support needed to sustain production because up until this point, the depots had not seen vehicle assets from theater. More recently, the depots have seen less of that kind of damage, and the Customer Pay system has adjusted accordingly by reducing inventories to match demand and to get the right combination of parts to the depot floors when needed.

The variety of problems can be daunting. Not all the Humvees that feed into the depots for remanufacturing come from desert war zones. "We've gotten vehicles from Hawaii that were tremendously rusted," Chris Emery noted. "You don't get that in the desert." Emery works for W.W. Williams, a company whose main business is servicing interstate trucking and an industry partner in Customer Pay.

The depots group Humvees into two categories, "recapitalization" and "reset." Letterkenny does recapitalization. Whatever model Humvee comes in, the vehicle goes out of the depot a 1097 model—the basic unarmored Humvee. Red River does both recapitalization and reset. The latter involves rebuilding a Humvee so it emerges from the depot as the same model that came in, which is a somewhat more challenging task because a greater variety of parts are involved. Because the Humvee rebuilding program currently supplies the non-frontline military, those vehicles are not being reconditioned with new armor for combat. Humvees destined for war zones are coming off the line brand new at AM General's assembly plant in Mishawaka, Ind. But later iterations of Customer Pay, beginning in January 2009 under a new, extended contract, will involve remanufacture of armored Humvees.

For the 1097 models, made of roughly 2,000 parts, 140 must be replaced with new parts. The rest use reclaimed or refurbished parts. If not enough of those are available, AM General supplies new parts. Letterkenny produces 342 vehicles per month, according to figures kept by TACOM. The Maine Military Authority produces 25 per month. The totals vary at Red River depending on incoming volumes, but the average has been 340 per month.

An Atmosphere of Cooperation
Critical to accomplishing the process improvements has been an atmosphere of cooperation and partnership between the government and the private sector.

"We were able to build avenues of trust, open communication, and sharing of data; and that's allowed for a quantum leap in cooperation," said Whalen.

Emery said a key to the success of the program is not only smart forecasting of spare parts needs at the high end, but also regular interaction with the workers doing the assembly.

"We have direct contact with what's happening on the floor," Emery said. Trends in spare parts needs, "right down to a bolt," come to light in this way and help provide critical information that feeds into the decisions about what parts of the returning trucks need to be replaced.

After some initial skepticism as to whether the program would work, the positive results are unambiguous.

After the first month of the Customer Pay program, there have been no G-coded vehicles coming off the depot lines.

Average parts inventories are running at less than $25 million total at the two depot warehouses stocked by AM General under the program—enough for 30 days worth of assembly work. Prior to Customer Pay, the depots were maintaining roughly $100 million in inventory combined.

Since Jan. 16, 2006, the production line partnership has provided more than 21 million parts for the recapitalization and reset of more than 20,000 Humvees. Today, the three depots combined put out 726 Humvees per month.

The Army has documented cost savings of $3,414 per vehicle, or 6.6 percent, at Letterkenny, and $4,520 per vehicle, or 8.7 percent, at Red River.

Compared to the daily production line interruptions prior to Customer Pay, there has been only one line stoppage, for 20 minutes, in more than 590 production days since the program began.

Value Engineering
According to Dempsey-Klott, Customer Pay saved taxpayers $38 million in the past year by reducing unneeded spare parts purchases. Army Materiel Command recognized this success with the Value Engineering Award for 2007.

Letterkenny's Gray described it this way: "Before Customer Pay, we went for about three months without producing a single vehicle that had 100 percent parts. Today, we go about three months without a single vehicle missing a single part."

Gray said the success of the program lies in "letting industry do what it does best in terms of the supply chain, and letting the military do what it does best in terms of managing Army equipment."

After one year as a successful pilot program, the Defense Department twice approved one-year extensions with full program status. In January 2009, Customer Pay will be extended under a new, five-year contract between the government and AM General.

Customer Pay is not only a success story; it is also a prototype that the Pentagon now plans to apply to other vehicles and other types of military hardware.

"The program has been so successful," said McQuistion, "DLA plans to expand it to other areas under a broader scope that we term integrated logistics partnerships."

Preparing for the
Future of Systems Engineering

Karen Bausman ■ *John Colombi*

Every so often, people need to review past efforts, examine progress, and reassess future activities. After more than 40 years of practicing systems engineering within the Department of Defense, it is time we do just that. We must review past policy, guidance, case studies, and best practices; examine current work in engineering standards and processes; and reassess training and growth of the senior engineering workforce. This will require more than a coordinated update of the systems engineering chapter in the *Defense Acquisition Guide*. And we must ask how DoD can improve the current application of systems engineering by its organic and contracted workforce, and how can DoD collectively influence the application of systems engineering in the future?

Historical Perspective

In 1994, William Perry, then secretary of defense, issued a policy memorandum to eliminate all non-interface military standards and specifications. MIL-STD-499B, entitled *Engineering Management*, was the systems engineering standard originally released in 1969 and updated in 1974, and it was under review in 1994 when it was eliminated by Perry's memo. After several major catastrophic weapons system malfunctions, the military services began a concerted effort to reassert their own policies. For example, in the late 1990s, the Air Force established the Operational Suitability, Safety, and Effectiveness Program, which was an effort to improve the application of a subset of their more critical systems engineering processes. In a parallel effort, the Navy developed the *NAVAIR Systems Engineering Guide*.

Still faced with unending cost overruns and performance failures, the Office of the Secretary of Defense embarked on a series of efforts to revitalize systems engineering over the last few years. One of the most visible efforts taken was the 2004 Office of the Under Secretary of Defense for Acquisition, Technology and Logistics policy requiring all programs to develop a systems engineering plan for milestone decision authority approval at all milestone reviews. This action definitely got program management attention on OSD's new emphasis on improved planning and systems engineering execution. The next revision to DoD Instruction 5000.02 is expected to continue to embrace the use of systems engi-

Every so often, people need to review past efforts, examine progress, and reassess future activities.

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neering plans. OSD's systems engineering revitalization has also filtered down to the military services. Efforts continue to reassess systems engineering policies and instructions, develop guides and handbooks, engage in graduate and short-term systems engineering degrees and certificates, and establish civilian and military job series.

OSD also sponsored a series of National Defense Industrial Association studies that uncovered "Top 5" issues as well as quantified the value of systems engineering. As validation across government and industry, the original 2006 report identified a lack of systems engineering awareness, adequate systems engineering resources available to major programs, insufficient tools and methods to effectively execute systems engineering, inconsistent application of requirements definition and management, and poor initial programming.

Increased Complexity

Architecture has been one area of early systems engineering that has generated a consistently increasing amount of attention. Within DoD, this dates back to interoperability problems uncovered by joint warfighting in the first Gulf War. The C4ISR [*Command, Control, Communications, Computers, Intelligence, Surveillance, and Reconnaissance*] Architecture Framework was released and re-released in the mid-1990s to address the system design of interoperable, networked systems. It would become the DoD Architecture Framework in 2004 and codified in Joint Capability Integration and Documentation Systems, Acquisition Management Systems (DoD 5000), and numerous Service policies and instructions.

Increased complexity of the weapons systems that DoD acquires will continue, with no end in sight. With greater program and system interdependencies, larger software and networked weapons systems will flourish. Meeting performance, cost, and schedule goals continues to challenge many DoD programs. U.S. Government Accountability Office reports, such as their *Assessment of Selected Major Weapon Programs* (GAO-06-391), found several consistent factors that contributed to DoD's ability to handle such complexity. The major systems engineering contributors included requirements, reliability, test planning, and software. GAO reported that current efforts have "not eliminated cost and schedule problems for major weapons development programs." If the challenges of current systems engineering cannot be resolved, that may only indicate greater challenges are in store for us in acquiring more integrated, network-centric weapons systems in the future.

Current Perspective and Growth of the Discipline

In January 2004, the International Council on Systems Engineering (INCOSE) brought together experts to perform an in-depth study on the future state of systems engineering. The council published its report in October 2007 with the Systems Engineering Technical Vision (found at <www.incose.org>), stating:

Systems engineering will become an established international "inter-disciplinary connector" or a "meta-discipline."... With the maturation of the global practice of systems engineering, as well as the stronger understanding of how to handle complex systems, systems engineering will advance into addressing the social, economic, environmental, and planning issues of the time.

This position for the growth and maturation of the discipline aligns with a number of National Academy of Engineering (<www.nae.edu>) and industry professional society studies and academic engineering periodicals. It is understandable during this time of systems engineering growth that when a group of experienced systems engineers gathers, many different opinions emerge. This is because most senior systems engineers have had very divergent, yet relevant, work experiences within their domain of experience. These engineers executed tailored versions of a global core systems engineering process, as shown in Figure 1. The visions of what systems engineering embodies, etched in these systems engineers' minds, is the basis of what they each bring to the table. For example, some engineers in the space community firmly believe that space systems engineering is a different discipline of study. Perhaps this belief is the result of focusing on the space domain's unique environment (thermal and radiation), technical challenges (launch, power consumption, control) or areas of emphasis (parts ultra-reliability) while overlooking systems engineering commonality. Moreover, many believe a person is a competent systems engineer if the person writes plans, specifications, and interface control documents, and uses the vernacular of the systems engineering profession. But if you understand art, does it make you an artist? No. There is clearly an experiential component to engineering and systems engineering.

Future Harmonization of Terms

At the 1996 INCOSE Symposium, member Sarah Sheard remarked, "Systems engineering is a naturally broad field. No
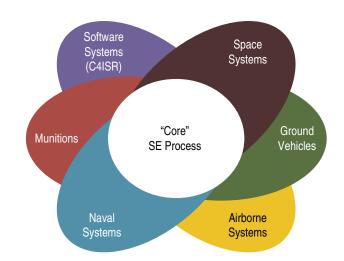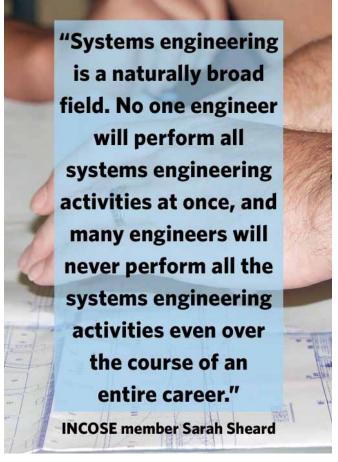
Figure 1: **Core Systems Engineering Process**

"Systems engineering is a naturally broad field. No one engineer will perform all systems engineering activities at once, and many engineers will never perform all the systems engineering activities even over the course of an entire career."

INCOSE member Sarah Sheard

one engineer will perform all systems engineering activities at once, and many engineers will never perform all the systems engineering activities even over the course of an entire career." Priorities vary from project to project and resources for accomplishing systems engineering tasks vary as well. In order to contain this divergence, a universal agreement on the global systems engineering process, the names given to the process, and the definition of the activities and products produced by each process, is long overdue.

However, there still is not a single standard for systems engineering process and terms. Although harmonization has begun between the various standard committees, the three main applicable standards are:

• ISO 15288, *Systems Engineering-System Life Cycle Processes*
• Institute of Electrical and Electronics Engineers (IEEE) 1220, *Standard for Application and Management of the Systems Engineering Process*
• Electronic Industries Alliance (EIA) 632, *Processes for Engineering a System*.

The schedule for harmonization efforts, dictated by the International Standards Organization (ISO) country agreements and voting/vetting process, is a lengthy and political one. The IEEE 1220 Standard Committee is working closely with the released 2008 update to ISO 15288 and is planning to publish IEEE 15288 soon. The EIA 632 Standard Committee is aware of the ISO/IEEE 15288 harmonization efforts and is currently in the process of updating their standard. Each of these standard committees believes their approach

is correct. From a top level of abstraction, the major differences between the standards are the specific nomenclature and definitions. Adding more confusion to this mix is the fact that there are two systems engineering guidebooks and no firm resolution on which is *the* authority on systems engineering: DoD's *Defense Acquisition Guidebook* and the *INCOSE Handbook*. The *Defense Acquisition Guidebook* supports the Defense Acquisition Workforce Improvement Act acquisition professional certification levels taught by the Defense Acquisition University. The *INCOSE Handbook* is a community-generated systems engineering process description, aligned with ISO 15288, and it is used to certify systems engineers.

In order to expedite the harmonization efforts, each of the standard committees must accept a single global systems engineering nomenclature and definition. Attainment of standardization is an essential and foundational building block upon which systems engineering education must rely. The formal release of ISO 15288-2008 should signal all other standard committees to update their standards and to show consistency. Tailoring guidance to apply these newly agreed-upon standards is overdue and should enable program teams of the future to better apply systems engineering. Assessment guidance to measure application of scalable processes will go a long way toward ensuring systems engineering consistency.

Future of Systems Engineers

One of the most critical issues identified across the international community is that there are not enough qualified systems engineers. A recent job search on Monster.com and Careerbuilder.com indicated more than 2,000 systems engineers were needed across the country. This issue is not likely to wane in the future. In a June 2008 *New York Times* article, "Top Engineers Shun Military; Concern Grows," Philip Taubman reported on the brain drain of scientists and engineers within the defense industry. While he did not provide numbers of lost engineers, Taubman suggested that the discipline of systems engineering was the most affected. He wrote, "The central problem is a breakdown in the most basic element of any big military project: accurately assessing at the outset whether the technological goals are attainable and affordable, then managing the engineering to ensure that hardware and software are properly designed, tested and integrated. The technical term for the discipline is systems engineering. Without it, projects can turn into chaotic, costly failures."

Thus far, organizations have focused on the amount of time it takes to mature systems engineers from existing disciplined engineers already in the workforce. Recent updates by the academic community in graduate education have not captured the momentum needed to make an impact for the future. While positive educational benefits to individual students exist today, it is impossible to capture the direct impact on programs. An innovative approach to identify

Figure 2: **Plan for Future Systems Engineering**

International Standards Bodies
(ISO, IEEE, EIA)

SE Professional Societies
(INCOSE, IIE, IEEE, NDIA, GEIA)

Academia

DoD Engineering
Workforce

DoD SE Workshop

DoD SE Realization Plan
• Core harmonization
• SE education vision
• SE workforce solution

and target talent early, defined by academia and industrial/government organizations, is long overdue. This approach should also include a more aggressive area of concentration at the graduate and undergraduate levels, as well as continuing systems engineering education for the workforce.

Early Identification of Talent

Through standardized testing, K-12 students could be identified as having natural systems thinking, logical abstraction, analytical, and engineering characteristics. (Note: Natural systems thinking involves a child's showing an understanding of systems without being taught how.) In some well-referenced studies, such as the 2006 MIT dissertation entitled *Enabling Systems Thinking to Accelerate the Development of Senior Systems Engineers* by Heidi Davidz, other characteristics have been proposed to be equally important:
• Broad or out-of-the-box thinking
• Curiosity
• Strong communication skills
• Open-mindedness
• Strong interpersonal skills
• Tolerance for uncertainty
• Questioning
• Multitasking skills.

Many connect these traits to personality type. A development program for those students to expand these characteristics could be beneficial. There are many scattered development programs across the United States that create curricula to apply scientific, technical, engineering, and mathematical lessons to the K-12 environments. An integration of the products generated from these programs would benefit all of the independent organizations in that those products could be made available for all of the programs. Identified students, strong in systems thinking, should excel in these application areas. Further encouragement can guide these students into technical areas of interest.

Future of Systems Engineering Education

In undergraduate education, and especially graduate school, every student planning to work in industry or government (not just systems engineers, but also accountants, contracting officers, program managers, and marketing managers) needs to tak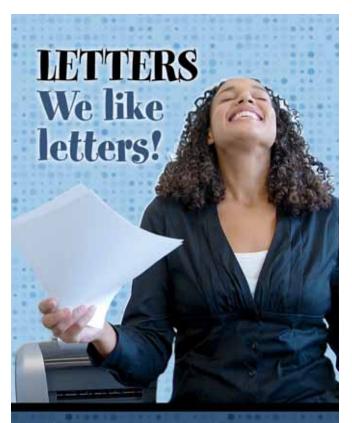e a course in introductory systems thinking. The students should recognize that their office fits into the enterprise, that their component fits into a system, and that their system must be interoperable across a system of systems. Suboptimization and contextual relationships must be evaluated. This type of course complements any major course of focused, disciplined study.

In colleges of science and engineering, systems engineering concepts and fundamentals should form the curriculum for lower-level courses. In addition, a new systems engineering management field of study could emphasize the integration of technical, cost/schedule, communication, and risk management issues. Finally, engineering schools should re-examine how to best attract and educate young students. As systems become more complex and adaptive, the typical engineering abilities of analysis (breaking down) need to be further enhanced with more synthesis (putting together). The knowledge, skills, and abilities to think about the system-level characteristics of the aggregation of complex components, including the human user, is a skill for all disciplined engineers. If there are not enough qualified engineers coming out of the graduate systems engineering education pipeline, innovative ways must be found to increase the input numbers of available engineers to enter the pipeline, subsequently affecting the output numbers. For example, identify systems thinking skills in elementary school students or provide more hands-on engineering laboratory or orientation coursework early in a freshman engineering program to encourage undecided students to obtain a (systems) engineering degree.

Continuing professional education will need to further embrace distance learning to better reach the entire DoD acquisition workforce. Development programs created to earmark high-potential employees should steer them to advanced graduate education in systems engineering, industrial engineering, or systems engineering management. Core competencies in systems engineering will help, as well as a method of establishing performance accountability. On-the-job training programs must also contribute to those systems engineering development programs, including the life and work experiences that are critical for success. The right integrated approach, defined by an experienced academic council and guided by a professional society, will be critical for success, and a roadmap needs to be developed to communicate the integrated aspects to meet this challenge.

Call to Action

Prior to acquisition reform of the early 1990s, government senior engineers incorporated best practices and lessons learned into their military specifications and standards. For example, MIL-STD-499B was to be the premier guide for

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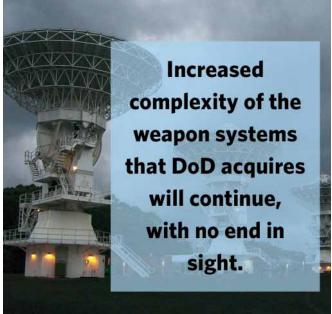
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Increased complexity of the weapon systems that DoD acquires will continue, with no end in sight.

applying systems engineering to DoD acquisition. With the elimination of military specifications and standards during acquisition reform, DoD began to rely only on best commercial practices. This included best commercial practices for systems engineering.

Once again, it is the time for government systems engineers to work together to shape the future. As depicted in Figure 2, a DoD realization plan for future systems engineering is a realistic near-term goal. This plan needs championing by senior engineering evangelists—highly respected, charismatic leaders—and recognized senior engineers committed to this critical task. A DoD Systems Engineering Workshop to address those issues could begin to map the way. The effort needs to start now, with an aggressive approach to harmonizing the systems engineering processes within the *Defense Acquisition Guide* based on the globally accepted definition of systems engineering in ISO/IEEE 15288. That is a challenge to the engineering community concerned about the evolution and improvements needed for future DoD application of systems engineering. If systems engineering is to successfully address weapons systems performance in an environment of growing complexity, those issues need to be addressed.

Our starting point must be a plan to assure we have the systems engineering resources available to meet this growing demand. Developing systems engineers is, in part, a function of education, which must rely upon commonly accepted standard practices that are conveyed to the student. Without those standard practices and processes, systems engineers cannot be reliably grown. The time to address these root cause problems is far overdue.

The authors welcome comments and questions and can be contacted at karen.bausman@afit.edu and john.colombi.ctr@ afit.edu.

Reducing Costs with Value Engineering Change Proposals

VECPs in Supplies or Services Contracts

Danny Reed ▪ *Jay Mandelbaum*

A VECP proposes a change that, if accepted and implemented, provides cost savings to the government and a substantial share in the savings accrues to the contractor as a result of the change implementation.

Value engineering is an important and flexible tool in the Department of Defense's effort to reduce costs while retaining required performance aptitude. The VE methodology saves money, increases quality, and improves mission capabilities across the spectrum of DoD systems, processes, and organizations. It employs a simple, tailorable, and structured set of tools, techniques, and procedures that challenge the status quo by promoting innovation and creativity. As used in DoD contracts, VE fundamentally looks at any contractually specified item, function, process, or deliverable, and it devises a way to do it better and cheaper.

A VE change proposal is a proposal submitted to the government by the contractor in accordance with the VE clause in

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the contract. A VECP proposes a change that, if accepted and implemented, provides cost savings to the government and a substantial share in the savings accrues to the contractor as a result of the change implementation. It provides a vehicle through which acquisition and operating costs can be reduced while the contractor's rate of return is increased.

Substantial Benefit to DoD and Industry

Using contractor-submitted VECPs provides incentive to both the government and its industry partners to achieve real-time best-value solutions as part of a successful business relationship. From a government perspective, benefits include:
- Providing incentive to industry to use its high-level engineering expertise to reduce costs and improve capabilities of DoD systems immediately
- Building a more effective business relationship with industry.

From a contractor perspective, benefits include:
- Increasing financial performance by sharing in the cost savings that accrue from implementation (VECPs pro-

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vide a source of profit excluded from the profit limitations on contracts)
- Creating business opportunities for modernization or technology insertion
- Enhancing competitiveness by improving the item in production or other related items and establishing a reputation as a cost-conscious supplier
- Improving communication with the customer
- Promoting retention and growth of technical expertise by providing engineers with opportunities to work on more challenging problems
- Developing technology that can be used on other contracts.

The flexibility of VECPs is enormous. For example, consider a situation in which a major missile program extends its scheduled procurements because of program funding cuts, resulting in annual purchases of half of what was expected. Radomes [*dome-like shells used to house a radar antenna*] are a high-cost item under that particular missile program acquisition. If they were to be purchased on the revised procurement schedule, the unit price would increase by 50 percent as a result of production slowdown. Because radomes do not change, the government wants to purchase them all at once to reduce the overall cost of the program. However, the government lacks the resources to purchase the full number in the current fiscal year.

The contractor has the latitude to use its own funds to make the full radome purchase without using the VECP clause. However, the acquisition of the radomes would be at great risk to the contractor with little or no likelihood for return on investment because, based on Federal Acquisition Regulations (FAR) pricing principles, the contractor would be required to sell them back to the government at the price paid. Meanwhile, the contractor would have incurred inventory holding costs and lost opportunity costs. Under FAR Part 48, the better solution would be to use a VECP on the performance-based contract. This allows the contractor to make the quantity purchase and sell future radome lots back to the government at the lower bulk-buy price, thereby leading to huge potential savings. The VECP provides significant savings above the inventory holding costs. In a real-world case involving radomes, using a VECP led to a total savings of $1,153,500 shared equally between the contractor and the government.

The Need for Greater Use of VECPs
DoD encourages using VECPs on contracts in accordance with the FAR. Part 48 governs VE within the federal government. According to FAR 48.201(a), unless exempted by an agency head, a VE incentive clause must be included in all contracts exceeding $100,000, except those for research and development (other than full-scale development), engineering services for non-profit organizations, personal services, commercial items, or a limited specific product development. Furthermore, the use of the VE incentive clause is encouraged for use in smaller dollar-value contracts in which there is a reasonable chance for savings. For supplies or services contracts, FAR 52.248-1 is the incentive clause that provides the basis for contractors to submit VECPs. Although this clause and its alternates have typically been used in relatively clear-cut situations, an untapped potential exists for flexibility and tailoring to accommodate the needs of the business partners.

The past five years have seen a heightened importance of sustainment for older existing systems. Contractor logistics support is being used more often to maintain current fielded systems. New techniques are being sought to improve existing systems, to extend service life, and to reduce operating and support cost. This enhanced interest in sustainment of existing systems offers an increased opportunity for the use of VECPs.

Unfortunately, in today's contracting environment, a number of factors impede taking advantage of this potential. External circumstances often add complexity to VECP processing. While these circumstances can be accommodated by the current FAR clause, the contracting process is not well understood by all acquisition process participants. An additional complicating factor is the relatively small number of VECPs being submitted as compared to past years. Also, work on a VECP is usually initiated before the VECP is formally accepted by the government. Until a VECP is approved by the government, the contractor is at risk for costs incurred. All of these factors can lead to a contractor's perception that the acceptance process is too complicated and the risks are too high. Consequently, many contractors are discouraged from submitting VECPs. Likewise, many program managers and contracting officers within the government do not understand the VECP contractual process and, lacking this insight, do not fully use the program.

While there are often multiple contract modifications made on the instant contract [*the contract under which the VECP is submitted*] before a single VECP is accepted, the process is relatively straightforward. The first modification may be an approval to begin work. The second may be the settlement of all instant, concurrent, and possibly future savings shares (often called the definitization modification). The third modification may be the record engineering change proposal that changes the configuration. In addition, as new contracts are awarded, there may be further modifications to provide the contractor with its share of future savings.

To help overcome some of these complexities and enhance the likelihood of successful outcomes, the following paragraphs suggest some best practices for using VECPs in specific contracting situations.

Undefinitized Contract Actions with VECPs
The undefinitized contract action (UCA) has proven to be one of the best ways to expedite the VECP process, reduce

risks, and enable all parties to maximize savings. The UCA allows VECPs to be submitted early in the contract and, thus, VECPs can be implemented early to maximize savings. Defense Federal Acquisition Regulation Supplement (DFARS) 217.7401(a)(2) excludes VECPs from the restriction on the use of UCAs.

Non-Complex VECPs Needing Rapid Action

This is a situation in which the nonrecurring expenses (NREs) are small, success can be demonstrated quickly, and breakeven [*when a balance is reached between investment and return*] occurs relatively early. Even in this simple case, multiple contract modifications are needed to maximize the benefits for both the government and the contractor. A UCA with appropriate caveats allows the contractor to initiate VECP activity immediately and contractually establishes a not-to-exceed cost to develop and implement the change. The modification that settles the VECP occurs later—after the contractor has submitted full pricing data.

As a best practice, the use of a UCA with appropriate caveats can generate savings for the government and contractor in situations in which quick action must be taken (e.g., all of the savings will occur on the current contract) to modify an item and reduce its cost. The UCA provides the contractor with some assurance

the government will buy the revised item, and, assuming all caveats and concerns are resolved, it contractually implements the VECP. The contractor may then make informed business decisions about committing resources and taking any other actions necessary to deliver the modified items as soon as possible. Under the best of circumstances, no deliveries of the unmodified item will be made. Without such an indication of interest from the government, the contractor is much less likely to take any action until final VECP approval. The result of the delay is that most—or, in the worst case, all—of the items will be delivered in the original, more expensive way.

Advantages to the government:
• Greater savings
• Minimized NRE liability though a contract modification with a not-to-exceed cost to develop and implement the change.

• Earlier implementation of the improved system
• Original delivery schedule maintained.

Advantages to the contractor:
• Greater share of savings to increase profit
• Reduced risk of early implementation.

Long-Term, Complex VECPs in Which the Government Funds the NRE Upfront

Long-term VECPs result in added complexity. In addition to multiple contract modifications, breakeven occurs in a future contract and nonrecurring engineering (including testing) takes several years. The government may fund all, some, or none of NRE for the VECP in the current contract.

> There is an unrealized potential for using VECPs in today's contracting environment.

As a best practice, a UCA, with appropriate caveats, should be used to get mutually beneficial work started quickly. If the government is able to fund the NRE and if both parties are interested, the government should use the funding as leverage to maximize its share of the savings and expedite the process. If the government is only able to fund part of the NRE, the government could use the funding as leverage to increase its share of the savings (above the minimum allowable by the FAR). Thus, the government's share of savings is greater than the contractor's share, depending on the amount and the associated risk by the government. The UCA mitigates some contractor risk, allows the contractor to charge the basic contract for some of the development efforts, and enables the government to get work started quicker when funds are not available. The contractor may

fund negative instant contract savings in anticipation of re-couping that investment out of future savings if government funds are not sufficient for the entire NRE effort.

Advantages to the government:
- Involvement in the process to solve the problem, thereby attaining strong assurance that the final product will meet requirements (for cost savings, capability, etc.)
- Ultimate savings and increased capability
- Reduced obsolescence.

Advantages to the contractor:
- Assured reimbursement for NRE
- Improved likelihood of future sales, generating a share of future savings to increase profit
- Opportunity to build the latest configuration using modern technology
- A share of the savings.

VECPs on Performance-Based Contracts
Using a VECP with a performance-based contract is beneficial when nonrecurring costs are greater than the savings on the current contract. In this situation, the VECP is the only mechanism that enables the contractor to recoup its investment (in future contracts) and enables the government to realize the benefits of the investment.

A mistaken belief is that a VECP requires a change in a specification. It does not; it requires only a change in the contract. The change could be a contract modification for a business arrangement authorizing the VECP and agreeing on sharing future savings without any technical change to the configuration baseline, such as when a contract contains the former military standard on configuration management. As such, it required the VECP to be submitted on DD Form 1692, *Engineering Change Proposal*. On Block 30 of the form, "Configuration Items Affected," it noted "None." On Block 31, "Effects on Performance Allocations and Interfaces in System Specification," it noted "This change will have no effect on the end item's system performance. This value engineering proposal simply allows us to take advantage of the substantial cost savings obtained by the multi-year contract that Company Z had negotiated."

As a best practice, VECPs should be allowed on performance-based contracts. Letters that agree to treat changes as a VECP on performance-based contracts should be issued where appropriate to get the work started faster. The government becomes contractually committed to consider the VECP in future contracts only when the VECP meets every term of the offer.

Advantages to the government:
- Lower cost
- Ability to benefit from longer-term cost-reduction efforts
- Improved capabilities.

Advantages to the contractor:
- Reduced investment risk
- Additional profit from share of savings
- Ability to undertake longer-term cost-reduction efforts.

VECPs on Incentive Contracts
When a VECP is awarded on a contract with incentive clauses, the contract should be modified in a way that does not reward the contractor twice for the same activity while maintaining the desired incentive structure. The FAR states that payments to the contractor generated from a VECP should not be rewarded under any other clause of the contract.

As a best practice, the government should encourage VECPs on contracts with incentives. For contracts with no direct cost-based incentives, there is no potential for double rewards. The incentive structure is designed to encourage certain desirable behavior that is complementary to VECPs. When there are cost-based incentives, there may be circumstances in which both the government and the contractor benefit from using the VECP clause in the contract. When a VECP is approved, the cost-based portion of the incentive pool should be adjusted so the contractor is not rewarded twice for the same activity.

Advantages to the government:
- The contractor is not rewarded twice for the same activity
- The existing incentive structure is maintained and desired behaviors continue to be motivated
- Costs are reduced as quickly as possible.

The advantage to the contractor is that options for incentives using VECPs as well as other incentive clauses are preserved.

VECPs on Development Contracts
Another misconception is that VECPs apply only to production contracts. Whenever a new development contract is awarded, the contractor's systems engineering process leads to trade-offs to meet the cost and schedule requirements of the contract. Even under circumstances with exceptionally low risk, there is usually no time, nor are there resources for a parallel effort to use an alternative (emerging) technology that is expected to perform better at less cost. VECPs are an effective mechanism for funding such parallel efforts as long as the government is satisfied that the original solution was the best available at the time.

As a best practice, DoD should permit contractors to start a company-funded parallel VECP effort on development contracts to offer a VE alternative to a high-cost part of the system, like a missile seeker, as soon as possible after the development is completed. The government should monitor the progress. When companies will not undertake such a parallel effort, a VECP on development contracts should

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be mandated by paying for the VE activity under FAR 52.248-1, Alternate I or II.

Advantages to the government:
- Under a mandatory VECP, the contractor gets a smaller share of the savings
- Shortly after the new system is qualified, a VECP can be offered to change the system to lower costs and improve performance
- The government can get an improved system much earlier than normal while having its costs paid out of the savings
- A VECP on a development contract offers the greatest opportunity for savings because it implements early and can affect the largest number of units.

Advantages to the contractor:
- An opportunity to share in savings
- A competitive advantage in being able to build a more advanced system earlier
- Improved customer relations by working with the government on the VECPs.

The Potential in VECPs

There is an unrealized potential for using VECPs in today's contracting environment, and the widespread dissemination and use of the information this article provides, along with the sharing of other knowledge and experience from the past and the future, will help advance strategic objectives for DoD and provide increased profit and other benefits to the contractor.

Effective knowledge management means intentionally using intellectual assets to improve organizational performance through increased efficiency, effectiveness, and innovation. It aims to link knowledge seekers with knowledge sources (both written and experiential). Web-based communities of practice are proven vehicles for making these connections, for linking people with experience to others who can benefit from their insight and knowledge, and for nurturing a culture that facilitates two-way communication and sharing of knowledge. Communities are bound by a common goal and purpose, and are supported by a desire to share experiences, insights, and best practices.

> As a best practice, DoD should permit contractors to start a company-funded parallel VECP effort on development contracts to offer a VE alternative to a high-cost part of the system.

Such a knowledge management approach is being applied to VE. A community of practice, initially focused on VECPs, has been organized to help practitioners share and learn from one another, face-to-face and virtually (see <https://acc.dau.mil/vecp>). The community of practice will help navigate the VECP process, improve the probability of successful VECP evaluations, provide assistance and answers to technical questions, and serve as a forum for disseminating the latest information. Contracting officers, VE practitioners, program offices, and industry representatives are all encouraged to use this Web resource to share and build on the material contained in this guide.

There is a great potential for additional VE savings to benefit both the government and contractors. The opportunities are real and should be worked by both government and industry personnel.

Note: Jay Mandelbaum and Danny Reed pulled material for this article from their book, Guidebook for Using Value Engineering Change Proposals in Supplies or Services Contracts, *published by the Institute for Defense Analyses.*

The authors welcome comments and questions and can be contacted at dreed@ida.org and jmandelbaum@ida.org.

LMP Makes Strides Toward Full Deployment

Col. Scott Lambert, USA

By replacing a stovepiped legacy systems environment that prevented the quick aggregation of accurate data, LMP enables the Army to leverage the power of precise, up-to-the-minute, enterprise-wide data.

**US ARMY
LMP**
LOGISTICS MODERNIZATION PROGRAM

The U.S. Army's Logistics Modernization Program is currently used to manage a multi-billion dollar inventory with tens of thousands of vendors, and it is integrated with more than 70 Department of Defense systems. Operational since 2003 and managed by the Army Program Executive Office for Enterprise Information Systems (PEO EIS), LMP is used by the Army's Communications-Electronics Command Life Cycle Management Command, the Defense Finance and Accounting Service, the Tobyhanna Army Depot, and a dozen other Army organizations. And although LMP is an Army program, its impact and the lessons learned from its success story can be applied across DoD.

LMP delivers a fully integrated suite of software and business processes that streamline the maintenance, repair,

and overhaul; planning; finance; acquisition; and supply of weapon systems, spare parts, services, and materiel to servicemembers. By replacing a stovepiped legacy systems environment that prevented the quick aggregation of accurate data, LMP enables the Army to leverage the power of precise, up-to-the-minute, enterprise-wide data. And by providing a comprehensive, modernized logistics solution to the Army and DoD, LMP provides world-class logistics readiness capabilities to servicemembers in Iraq, Afghanistan, and around the world. LMP also provides Army and DoD leaders with real-time asset visibility and financial controls. For example, LMP allows Army and DoD users to see how many spare parts are in inventory; prepare for demand and forecast planning of those parts; as well as track and budget for costs associated with the manufacture, warehousing, and distribution of those parts. Additionally, the

Lambert has been the Logistics Modernization Program project manager since August 2006. He is responsible for executing the project and ensuring LMP meets all cost, schedule, and performance goals.

technology and business processes used by LMP interact with and support dozens of DoD systems, demonstrating its ability to support joint force logistics and supply chain management.

Advancing the Army's Business Enterprise

LMP is a critical component of the Army's initiative to integrate its supply chain management and business processes. So to better support this Army mission, the PEO EIS recently implemented organizational changes to more closely align its structure with the vision of the assistant secretary of the Army for acquisition, logistics and technology. As a result, LMP, Global Combat Support System-Army, the Product Life Cycle Management Plus Program, the Defense Integrated Military Human Resources System, and the General Fund Enterprise Business System are under the umbrella of the Army Enterprise Resource Planning Systems Integration Task Force. This organizational change streamlines management of PEO EIS enterprise resource planning and enables these important systems to better support servicemembers, as well as work together in a focused, comprehensive ERP effort. Additionally, the new structure helps each of the programs develop and field new systems, support systems already in the field, ensure no duplication of efforts, and move everyone in the same direction.

"The Army needs to take an enterprise approach with these systems," said Program Executive Officer for Enterprise Information Systems Gary Winkler. "By strategically aligning our ERP systems, we can leverage everything from lessons learned to software applications and resources to put everyone on the same page and deliver a cohesive end-to-end business enterprise."
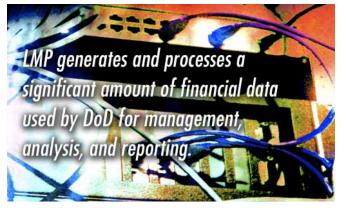
Building Upon a Strong Track Record

LMP is a logistics information system, but it is also a system of record for Army working capital funds. It generates and processes a significant amount of financial data used by DoD for management, analysis, and reporting, which is why it's so important for LMP to be compliant with the Federal Financial Management Improvement Act.

FFMIA certification means that the LMP complies with federal financial management systems requirements, applicable federal accounting standards, and the U.S. Government Standard General Ledger. To meet FFMIA requirements, LMP established a disciplined, phased, and collaborative approach that analyzed and determined the program's baseline of information, defined a test plan, developed test scripts, and performed—and passed—the tests. The pro-

gram worked closely with the Army Audit Agency, which independently validated and verified the approach. Today, as one of only a few FFMIA-compliant systems, LMP is playing a critical role in helping the government achieve its financial goals.

LMP also was certified as compliant with the DoD Information Technology Security and Accreditation Process, but when newer security standards were enacted, LMP implemented a comprehensive action plan to meet the more stringent requirements that focus on system security and validation of the data being used. In December 2007, LMP was successfully recertified as compliant with the DoD Information Assurance Certification and Accreditation Process, which ensures that LMP data transferred over Army networks can be trusted, are secure, and meets rigorous information assurance requirements. Similarly to the way in which it achieved FFMIA compliance, LMP used a phased approach that planned, tested, and remediated issues to become DoD Information Assurance Certification and Accreditation Process compliant.

LMP generates and processes a significant amount of financial data used by DoD for management, analysis, and reporting.

An Integrated Solution to Support Critical Decision-Making Capabilities

LMP provides an integrated logistics solution that aligns with DoD and Army policy while delivering the capabilities needed to support critical decision making for supply chain planning, maintenance processes, depot operations, and budget and finance. The system enables personnel to quickly and confidently address strategic issues, appropriately manage risk, and prioritize the Army's needs.

For example, LMP provides item managers and project leaders with enhanced oversight of maintenance programs. The system supports improved tracking of labor hours and dollars expended per repair program, and it integrates detailed, accurate forecasting capabilities. LMP also supports greater collaboration between users and item-repair facilities, resulting in more accurate forecasting and program execution. With LMP, a project can be created, funded, transmitted to the depot, rejected, renegotiated, retransmitted, and accepted by the depot in one day. In fact, with LMP, most projects are accepted in a matter of minutes. In contrast, those activities previously required approximately two weeks to one month to complete, using multiple legacy systems.

Lessons Learned Put Into Practice

LMP continually leverages lessons learned from program experience to date as well as other government and industry ERP implementations. In fact, LMP has implemented a

formal process to leverage lessons learned that documents and tracks items. Included in its lessons learned repository are how to empower customers; align organizational structure with ERP business processes; communicate to the right people at the right time with the right message; educate and train users so they know, understand, and become comfortable with a new way of doing business; manage and maintain data quality; use document repositories that house everything from management processes and procedures to business process maps; enhance the development life cycle processes; improve testing processes; and increase testing automation to address requirements traceability.

Updating Policies and Procedures

As part of its data integration and business process rationalization effort, LMP also has been a driving force for eliminating outdated supply policies and procedures that were difficult to follow because of aging databases and numerous, non-integrated information systems. By eliminating the need for extensive manual intervention in supply procedures, LMP helped reduce the time, funding, and human resources required to process millions of Army-initiated transactions annually.

Education and Training

LMP's education program provides a foundation to learn about new business processes, and ERP and supply chain management concepts, as well as gain a high-level understanding of how LMP will enable the new business processes. LMP's training program teaches users how to use the LMP system to perform their job roles.

Additionally, LMP uses both teaching and demonstrating to increase understanding of the new business process and system. Teams at future deployment sites rely on their expert users, whom the Army educates and trains well in advance of Go-Live, which is the name given to the event that transitions legacy systems to LMP. Teams also participate in a shadowing program in which they visit with counterparts with similar roles at an already-deployed LMP site, viewing LMP in action and learning from other users' experiences.

Ensuring Data Accuracy

Cleansing of legacy data is a critical activity to deliver LMP. Legacy data often reflect multiple versions of a single business transaction, resulting in logistics and finance information that is difficult to reconcile in an integrated ERP environment. In other cases, lack of serial numbers and invalid inventory locations compound the transfer of data between legacy systems and the new environment. Lessons learned from deployment and best practices have resulted in defining clear roles and responsibilities for data management; improving data cleansing, testing, and migration processes; focusing more on education and training; and improving management oversight. Through unity of effort across the enterprise, LMP has made great strides in data accuracy for future deployments.

Communicating With Users and Stakeholders

LMP has learned the critical value of communications as a means to not only articulate the goals of the program to stakeholders, but also to develop a cohesive customer community that understands its vital role throughout implementation. Key messages within the communication strategy are specifically developed for different audiences within organizations touched by LMP.

LMP's Testing Strategy and Readiness Scorecard

LMP uses two independent testing teams to help ensure Go-Live events occur with few issues. The program management office established an independent verification/validation team composed of government personnel and support contractors who have extensive ERP experience. The team is managed by the Army's Communications-Electronics Command Life Cycle Management Command Software Engineering Center and reports to PEO EIS. To supplement these efforts, LMP's systems integrator has an independent test group that delivers independent reports to its own corporate quality management office. Together, these teams have delivered outstanding results and have made an important contribution to the success of LMP.

The LMP team also implemented a Go-Live Readiness Scorecard, which concisely defines metrics, relevant organizations, and decision-making processes required to move the project from one stage to the next. The overarching principle behind the scorecard is effective communication to all organizations that use LMP, as well as to senior management in PEO EIS, Army Materiel Command, and the Army. One of the biggest challenges to fielding large transformational systems such as LMP involves managing change and expectations. The scorecard is an essential tool used to communicate program status in real-time.

Achieving Program Success

The imperatives for deploying LMP are clear—deliver a reliable system that makes sense to users and provides capabilities that deliver, track, and manage equipment and supplies. LMP's success truly depends on the people who implement and use the system, the processes in place to manage everything from data to organizational structure, and the systems' advanced capabilities.

With full deployment set for 2011, LMP continues to gain momentum and support, achieve milestones, refine processes and procedures, and leverage lessons learned to ensure sustainment of current deployments, as well as readiness for upcoming Go-Live events.

The Promise of Computer Simulation Applications

Robert L. Tremaine

A bout a year before Ken Krieg left his position as under secretary of defense for acquisition, technology and logistics, he challenged the Defense Acquisition University to take a more concentrated review of team training in the defense acquisition workforce. With additional team training specifically focused on sharpening intact teams, he felt the defense acquisition workforce could operate at even higher performance levels—something the Department of Defense commonly demands. He even codified it as a near-term training goal in the *2007 AT&L Human Capital Strategic Plan*, V3.0, under Workforce Goal 4.2.3, "Pilot an initial unit cohort training program." He also encouraged the use of state-of-the-art simulation technology.

In response to this amplified interest in team training, DAU set out to find more about computer simulation technologies, especially ones that showed promise for cohort teams. It was recognized that simulations in general are attractive for a number of reasons, as they:
• Focus learners' attention on the problem, eliminating the distractions that occur in real life

Tremaine *is a retired Air Force colonel and currently an associate dean at the Defense Acquisition University. He has over 25 years' experience in air, missile, and space acquisition.*

- Permit controlled manipulation of a situation with predictable results; learners discover and test hypotheses
- Allow learners to escape the consequences of poor decisions made by learners in the field—no permanent battle scars
- Ensure standardization of a situation (particularly valuable for evaluative studies and after-action reviews
- Can be used to measure affective as well as cognitive learning, cut the learning curve, improve the retention of soft skills, and speed up training by mimicking real processes and situations
- Make learning more enjoyable.

DAU developed an initial course of action characterized by a four-phased approach—Phase 1: Investigation and Selection of Simulation; Phase 2: Pilot Demonstration; Phase 3: Assessment; and Phase 4: Implementation.

Successful implementation of any simulation option depended on finding a suitable candidate that met certain criteria—bounded by an application designed for usefulness and trouble-free employment, which was a key expectation for this effort.

Phase 1: Investigation and Selection of Simulation Options

Simulation is not new to training at DAU. In the September-October 2004 issue of *Defense AT&L*, Owen Gadeken reported in his article "Through the Looking Glass: A New Way to Learn Program Management" on the favorable experience with Looking Glass, Inc.©, a non-computer-based behavioral simulation from the Center for Creative Leadership that is already in use in DAU's PMT 401 course. Looking Glass focuses on introspection and retrospection. It gives leaders and managers a chance to look within. Gadeken suggested it could also be equally useful for intact teams who require the same self-examination.

To date, there still aren't any off-the-shelf non-computer-based or computer-based simulations specifically designed for defense acquisition cohort team applications. Instead, most still concentrate on the outer technical and functional edges, otherwise known as the soft skills (e.g., leadership, strategic planning, communication, change management, organizational development, relationship building, etc.). But is that what matters most to cohort teams, or are there also processes that need further inspection?

For additional assistance, DAU looked to one of its strategic partners, the University of Central Florida (UCF) Institute for Simulation and Training, to shore additional capability. In the meantime, DAU established the following set of criteria that seemed achievable in the overall evaluation of a useful and trouble-free candidate simulation:
- Consistent with the learning tenets of DAU's Performance Learning Model to provide a diverse array of learning assets at the point of need

- Useful and suitable for the extended defense acquisition workforce community
- Straightforward and non-complex for students to operate
- Undemanding to facilitate
- Affordable and consistent with the costs of other computer applications used by DAU
- No more than one day in length
- Showing certain tangible return on investment in both the near and far term
- Not requiring unique and costly information technology infrastructure or invoking additional IT dependencies
- Potential applicability in DAWIA [Defense Acquisition Workforce Improvement Act] courseware
- Potential applicability in performance support.

Aside from the criteria, there was one showstopper, however, and it was preset: None of the candidate applications could involve developmental needs. Finding a non-developmental solution seemed to be a good point of departure. The marketplace is full of commercial off-the-shelf solutions. However, this development restriction caused a minor glitch in the selection process because none of the cohort simulations were specifically designed with the defense acquisition workforce in mind. On the other hand, if all the candidate computer simulations available required some level of development, could they be adapted for use by the defense acquisition workforce in some way? Fortunately, after initial screening, the DAU-UCF team found two simulation candidates that showed considerable promise: Executive Challenge™, developed by Enspire Learning; and ExperienceChange by ExperiencePoint, Inc.

To learn more about the two prospective simulations and their alignment with the goals of the under secretary of defense for acquisition, technology and logistics and with previously established criteria, the team consulted with both companies and explored the simulation mechanics of each. After several discussions and a more thorough inspection, both computer simulations did indeed appear to imitate realistic challenges that many intact teams face every day—especially the critical soft skills that give horsepower to the functional and technical demands required by acquisition professionals. How these simulations cultivated the soft skills was especially appealing.

Executive Challenge
Executive Challenge focuses on a computer manufacturing start-up company facing some tough decisions. Each player assumes a different position in the company and directly contributes to its success or failure. Everyone is actively involved in the process. Teamwork, collaboration, and consensus building—things cohort teams face every day—are crucial to the success of this simulation. The simulation itself is divided into three phases: Research and Development, Manufacturing, and Sales and Marketing. Each player has a

DAU set out to find more about computer simulation technologies, especially ones that showed promise for cohort teams.

different piece of the puzzle. It's up to individuals to decide what to share with the team. They must collectively decide how to allocate workforce resources and move the company forward. Tough decisions lie ahead. They have to strike a balance between training and production (e.g., planning for the future vs. immediate efficiency). They have to assign work based on certain skill sets while weighing workforce morale. Not surprisingly, obstacles arise, including those of an ethical nature. The team makes very real sacrifices to achieve success. Looking out for the team's reputation in the short run might cause problems later. A situation could escalate beyond recovery—too much damage to overcome. The team is constantly tested. They can't afford to sit still.

After an early faculty pilot and based on feedback from the participants, Enspire Learning adapted the simulation to more closely mimic the acquisition phases and emphasized requirements, research and development/production, and operations and support. The resulting transformation better reflected the acquisition dynamic, making Executive Challenge an even more effective simulation in the remaining pilots.

ExperienceChange
ExperienceChange focuses on GlobalTech, a hypothetical company fraught with realistic challenges. With limited time and resources, the team must "identify the issues, create a change plan, and implement this plan in the face of company-wide resistance" <www.experiencepoint.com/

sims/GlobalTech>. This simulation gives cohort teams the tools they may need to implement change through careful application of change management best practices. ExperienceChange also gives teams a greater understanding of how to build stakeholder buy-in. Together, the cohort team members attempt to lead a company to success (eventually thinking about their own organizations) by cultivating competencies associated with change management in four prescribed steps: reviewing change best practices, practicing using the model and associated techniques in a simulated case, reflecting on key strengths and opportunities to improve, and applying the change theory with decision support tools when back on the job.

Unlike Executive Challenge, the cohort team actually interviews company leaders and managers who possess assorted and sometimes confrontational perspectives about their company, GlobalTech. After the interviews, the team must ultimately choose from a variety of interventions and try to change the minds of company employees who are resistant to change. Each intervention has associated time (in days or weeks) and cost attributes. As in the real world, the team has fixed budgets and limited timelines. In short, there are more interventions at the team's disposal than they can afford. If the team members make correct decisions at the right time, they see a company "buy-in meter" that goes positive, and GlobalTech just might survive the market upheaval. If they make a series of incorrect decisions, the company buy-in meter goes negative, and the company's survival is at risk. Each team member has to critically think and weigh alternatives under time pressure, build consensus with their colleagues, and act decisively in the face of very real consequences—just like the real world.

Phase 2: Pilot Demonstration
Between November 2007 and August 2008, the DAU-UCF team conducted a total of six pilots to confirm the usefulness and effectiveness of these two computer simulation products across a very diverse group of volunteer organizations in the defense acquisition workforce. Executive Challenge was pilot-tested by DAU faculty at Fort Belvoir, Va.; the Defense Contract Management Agency at Sunnyvale, Calif.; and the Program Executive Office Land Systems, Joint Light Tactical Vehicle, at Fort Belvoir, Va. ExperienceChange was pilot-tested by the U.S. Special Operation Command, Hurlbert Air Force Base, Fla.; the Navy Criminal Investigative Service, Fort Belvoir, Va.; and the Strategic Change Management Center, Quantico Marine Corps Base, Va.

The DAU-UCF team sought the help of those organizations. Each of the computer simulations required one full day to complete. Executive Challenge required one computer without Internet access per player; ExperienceChange required one computer with Internet access per team. The training day started with a limited introduction to the simulation, followed by the associated theory, simulation mechanics, some initial training (e.g., a dry run), and a facilitated discussion

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Figure 1. **ExperienceChange Results**

Return on Investment	Organization		
	U.S. Special Operations Command	Naval Criminal Investigative Service	Strategic Change Management Center
	Sample Size: 18	Sample Size: 13	Sample Size: 19
This training was a worthwhile investment in my career development.	6.43	5.54	6.47
This training was a worthwhile investment for my employer.	6.57	5.54	6.47
I am comfortable in identifying forces for and against change within my team or organization.	6.00	5.62	6.16
I am able to use a best practices model to plan for change in my job.	5.93	5.31	6.11
I can implement change confidently after participating in this training.	5.79	5.62	5.89
This training will help me deal with surprises that accompany change in my job.	6.00	6.23	6.37
This training is important for cohort groups in general.	6.08	6.23	6.53
Learning Effectiveness			
Rate your increase in skill level of knowledge of this content before versus after the training. (0% is no increase and 100% is a very significant increase.)	6.01 (60%)	6.15 (65%)	6.21 (75%)
	Likert Scale (Low)1.....7 (High)		

after the formal portion of the simulation ended—where most of the deep learning occurs for these types of tools.

As the simulation got under way, participants were pumped-up with adrenalin. Questions flew, viewpoints were expressed, and debates ensued. It became clear that the success of both simulation experiences depended on constant and effective communication. Other factors—among them leadership, planning, organization, cooperation, technical agility, and even patience—were paramount in order to combat the prevailing uncertainties and clear the path for best decisions. Each simulation stretched the teams' abilities and limitations. Insights emerged. Since most of the participants were part of existing cohort teams, professional relationships were already in place. It eased some of the "storming, forming, norming, and performing" hurdles associated with new teams. [*The reference is to Dr. Bruce Tuckman's 1965 team development model.*] Nonetheless, healthy tension frequently surfaced (as planned) in response to the provocative and animated scenarios embedded in the simulations—all similar to what transpires on the job according to many of the volunteer participants. When the simulations ended, the cohort teams had truly been tested across a wide range of performance challenges. Ultimately, they seemed to feel good about the simulation they completed and the learning they experienced, and they appeared eager to exercise what they learned.

Phase 3: Assessment

After this limited pilot initiative, can these two simulation tools (and the growing family of similar computer applications finding their way to the marketplace) help raise the performance levels of cohort teams? The answer is "yes." Even though six pilot

runs doesn't constitute a huge sample size, they did allow the DAU-UCF team to collect sufficient data to indicate the promise and potential dividends afforded by computer simulations like Executive Challenge and ExperienceChange. The value and importance of practicing the soft skills (sometimes known as the glue that holds together functional and technical experts operating in cohort teams) quickly became evident in the DAU-UCF pilot demonstrations. Without them, there could be no success. The computer simulations also confirmed the necessity of these common skills to acquisition workforce members, whether they deal with products, services, or more tactical hurdles like milestone reviews, program assessments, or inspections of some kind. The soft skills we sometimes take for granted actually give cohort teams the collaborative elasticity, confidence, and decision momentum they require not just in simulations like these, but more important, in the real world.

DAU collected data by means of two separate surveys. Each was customized to the simulation type and administered at the end of each simulation day (Figures 1 and 2). The 84 pilot participants responded anonymously. The results were closely correlated. The feedback was both informative and quite favorable in most of the categories. Responses to "Return on Investment" and "Learning Effectiveness" questions were especially noteworthy, making these tools sound very useful. Many of the participants believed they could confidently apply their newly acquired competencies to their job right away.

Figure 2. **Executive Challenge Results**

Return on Investment	Organization	
	Defense Contract Management Agency	Joint Light Tactical Vehicle PEO Land Systems
	Sample Size: 18	Sample Size: 16
This training was a worthwhile investment in my career development.	5.94	5.75
This training was a worthwhile investment for my employer.	6.11	5.69
This forum provided me a mechanism for skills improvement.	6.35	5.75
I can implement a number of new skills confidently after participating in this training.	5.82	5.06
The new knowledge gained from the simulation has showed me the importance of close interaction and constant communication in cohort groups.	6.24	6.06
This simulation helped me better appreciate certain key fundamentals to decision making.	6.59	5.44
This training is useful for cohort groups in general.	6.53	5.88
Learning Effectiveness		
Rate your increase in skill level of knowledge of this content before versus after the training. (0% is no increase and 100% is a very significant increase.)	5.83 (58%)	5.88 (58%)
	Likert Scale (Low)1.....7 (High)	

Figure 3. **Summary Evaluation**

	Executive Challenge by Enspire Learning	ExperienceChange by ExperincePoint
Performance Learning Model Breadth & Depth	Can address core training and specialized training	Can address core training and specialized training
Suitability for Defense Acquisition Workforce Personnel	Mid- to senior-level	Junior- to senior-level
Simulation Complexity	Requires 60-90 minute tutorial, including a practice round	Requires no appreciable tutorial
Difficulty Level for Facilitator	Requires 2-day training; application is intricate and demanding	Requires 1-day training, minor endeavor
Total Execution Costs	Affordable	Affordable
Length of Training	1-day	1-day
Expected Return on Investment (near- to far-term)	Promising based on feedback surveys	Promising based on feedback surveys
Unique Infrastructure/ IT Dependencies	One computer per person, break-out rooms optional. No Internet access	One computer per team, break-out rooms for each team. Internet access
DAWIA Course Applicability	Multiple based on original curriculum mapping effort	Multiple based on original curriculum mapping effort
Performance Consulting Applicability	Targeted training, workshops, performance consulting, etc.	Targeted training, workshops, performance consulting, etc.

Good   Fair   Poor

Some participants arrived for the simulation day a little guarded and suspicious. Training doesn't necessarily stack high on everyone's priority list. One particular individual stood out. He was a lot more vocal and admitted upfront that he "really would rather be somewhere else today." At the end of the simulation, that same individual was equally vociferous about how much he enjoyed the simulation. He emphasized that he could exercise what he learned right away. The following sampling represents other comments captured by the survey:

- "Excellent simulation program ... highlighted the importance of trade-offs and communication."
- "Amazing to experience the communication that took place in our team. What seemed a daunting task proved attainable with our full communication."
- "All of us became teachers to each other."
- "Greatly influenced my outlook on teaming and communication."
- "Able to gain better insight into each job function and helped us assist one another when we stumbled."
- "This simulation was very worthwhile—outstanding!"

Figure 3 summarizes how each of the two simulations stacked-up against the evaluation criteria. Originally, the DAU-UCF team intended to narrow the selection to a preferred solution. After assessing all factors when the pilot ended, however, the team felt both simulations were distinctive enough to retain, since they addressed most of the same fundamental challenges facing cohort teams. Neither of the simulations failed any criteria. Even though Executive Challenge is more complex and requires more instruction time and facilitation expertise, it wasn't enough to offset the potential dividends. It seemed just as effective as ExperienceChange once it got under way.

Phase 4: Implementation

Where do we go from here? Since both computer simulations are commercially available, they can be deployed with relative ease. Their success depends on competent and versed facilitators— a key variable to the execution equation. In all cases, the facilitators involved in the DAU-UCF pilot proved to be exceptional, all scoring very high marks in the instructor evaluation category on the survey.
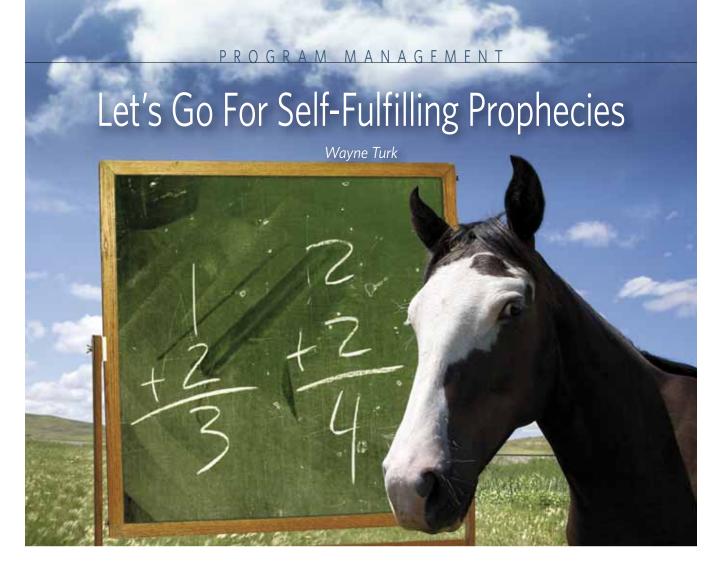
Looking ahead at future possibilities, both computer simulations could be used as performance enablers for many DAWIA training classes that focus on achieving successful team outcomes, and/or practicing new enabling skills or sharpening old ones. In the area of DAU performance support, the simulations could also lend assistance outside the classroom to defense acquisition workforce members when faced with more institutional challenges that require corrective action, intervention, or examination of the factors inhibiting key performance behaviors. Even though they are not defense acquisition-specific, those two tools could be extremely useful for defense organizations facing challenges in leadership, strategic planning, communication, change management, organizational development, and team building.

Adapting the computer simulations for specific defense acquisition needs might get easy in the near future, however. The two simulation product developers involved in the pilot are investigating existing authoring tool technology that would ultimately help them build more situation-specific scenarios. Consequently, it's just a matter of time before readily available computer simulations like those will truly mimic just about every aspect of an organization, making their value even more compelling.

As the saying goes, "practice makes perfect," and these two computer simulation applications already seem nicely suited for graduating the thinking and raising the performance level of cohort teams. They allow such teams the chance to practice, in a unique and engaging way, the vital enabling soft skills the defense acquisition workforce needs to meet daily challenges.

Let's Go For Self-Fulfilling Prophecies

Wayne Turk

We have all heard of self-fulfilling prophecies. Usually the term is used negatively. Let's look at it a little more positively when it comes to the people on your project. We will consider the negative too, but only in passing.

People have a tendency to live up—or down—to expectations. If you set high but reachable goals and share your expectations with your employees or project team, they can attain them. The expectations have to be realistic, however. That is what is meant by reachable. If goals are set too high, some people will give up before they ever get started. If goals are too low, people will attain them, but it may not help you accomplish your job as program manager.

Horse Sense

Let's start with the story of a horse, a very smart horse, by the name of Clever Hans. In the early 20th century, a mathematician taught Hans to do math, spell, solve problems, and do a number of other unlikely tricks. That wasn't so unusual. Other animals had been trained to do similar things. There was one big difference, though: All the other trained

animals had to have their trainer present to perform; Clever Hans didn't. He didn't seem to need cues from his trainer. He would perform and answer questions for anyone.

Of course, as with any trick, there were some problems. If the horse couldn't see the questioner, he didn't know the answer. And if the questioner didn't know the answer, the horse didn't either.

Are you beginning to get suspicious? So were a couple of researchers, Carl Stumpf and Oskar Pfungst (I'm not kidding—those were their names!). After much observation, they determined that the horse was able to answer based on the body language of the questioner. Clever Hans (who really was pretty clever) would start tapping his hoof when the questioner leaned forward and would stop when the questioner straightened up. The horse was good enough that even a raised eyebrow or the dilation of the questioner's nostrils would stop his hoof tapping.

As you can guess, questioners were actually giving the horse correct answers by communicating their expectations

Turk *is an independent management consultant with Suss Consulting. A retired Air Force lieutenant colonel and defense contractor, and the author of* Common Sense Project Management *(ASQ Press, 2008), he is a frequent contributor to* Defense AT&L.

through visual signals, however small and unintentional. Clever Hans was only clever when and because he was expected to be.

I'm not comparing people to horses, but the same thing works for them. If a PM communicates that she believes in the people working for her, has faith that they can do the job, and treats them with respect, the PM sets up expectations of success. Those communicated expectations now reside in both the manager and the person working for her. For example, the PM may assign the team member a challenging task or give him added responsibilities along with the understanding that she, the PM, expects the person to succeed. In most cases, the worker will do whatever it takes to do the job well or complete the task. Just knowing that a manager believes in him will make the person do the kind of good work expected.
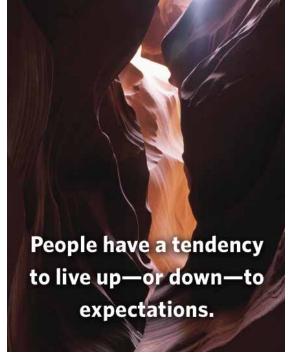
On the negative side (and here's where we normally hear the term "self-fulfilling prophecy"), if a PM or manager creates a situation where the expectations are negative (i.e., the employee will fail), that will usually happen, too. We have all seen instances when the boss gives a task to someone in whose capability to do the job he doesn't really have faith—and sure enough, it doesn't get done or is done poorly. That happens in many cases because the manager communicates the negative expectations through language (verbal or body) and attitude. Don't set people up to fail. Set them up to succeed!

Welding the Message in Place
Forensic psychologist and examiner Dr. Madeline Daniels, in an article entitled "The Self Fulfilling Prophecy," <www.drmadelinedaniels.com/?p=26>, that examines the power of expectation, gives the following example of a study done by Dr. Albert King on welder trainees.

A group of welder trainees who had all scored approximately equal in aptitude began training. Everyone, including the trainer, was told that five of the men had scored higher on the aptitude test. All five finished at the top of the class with a great record—fewer absences, less time (by half) to learn skills, and a significantly higher final test score. All students were asked whom they would want to work with, and all selected one of the five men they believed to have the higher aptitude.

It appears that the trainer and the other students set higher expectations for the "special" five, and the five lived up to those expectations. It seems that the trainers and other train-

People have a tendency to live up—or down—to expectations.

ees created truth out of fiction by unconsciously providing support and high expectations. With all that subliminal encouragement, it's easy to understand why those five trainees developed a positive attitude towards themselves and their work.

The study provides some pretty amazing confirmation that the self-fulfilling prophecy can work. Daniels goes on to give ways in which these expectations are transmitted and encouraged to become reality. To paraphrase her findings:

• **Climate:** Your non-verbal signals encourage or discourage those who work for you. You know how much a smile or a friendly tone of voice affects you.
• **Feedback**: Positive feedback encourages; negative comments discourage. Even when someone makes a mistake, there are different ways to respond. Comments like "Not again! You'd better learn to do it right," can do damage to attitude and confidence. "Not bad, but it might be better to try it this way instead," is helpful and encouraging, building more confidence.
• **Amount of input**: With positive expectations, most people tend to give that person more information to help them along. With negative expectations, people tend not to bother to give information.
• **Amount of output**: We expect more and better work from a good worker than a poor one. If you say something that, however diplomatically worded, translates to, "Don't bother with that; I know you can't do it," you discourage the employee from taking on any new responsibilities. Yes there are exceptions—the person who wants to prove you wrong—but they are relatively few.

Goals for Employees and for Yourself
So how do you actually set goals and expectations for your employees? Simply telling them what you expect is one way. But there is a better way. It takes more time and effort, but can pay great dividends in the end.

Sit down with your people individually. Together, map out what the goals are for the year, the quarter, the length of the project, the next major milestone, or whatever period is appropriate. Ensure that the goals are attainable and realistic, but don't set them too low. Sounds a little like the old Management by Objectives methodology, doesn't it? Write down those goals. Keep a copy and give the person a copy. Then meet periodically with each team member to assess progress toward meeting the goals. If things aren't progressing well, the two of you may have to change the goals. Make

Buying Green As the largest federal buyer of goods and services, the Department of Defense strives to ensure that every procurement meets the requirements of all applicable federal green purchasing requirements. In fiscal year 2004, DoD established a formal Green Procurement Program (GPP) to enhance and sustain mission readiness while protecting the environment through compliant, cost-effective acquisition that reduces consumption of resources and excessive generation of solid and hazardous wastes.

Environmentally preferable products

- Recycled content products
- Energy-efficient products & water-efficient products
- Alternative fuel and fuel efficiency
- Biobased products
- Non-ozone-depleting substances
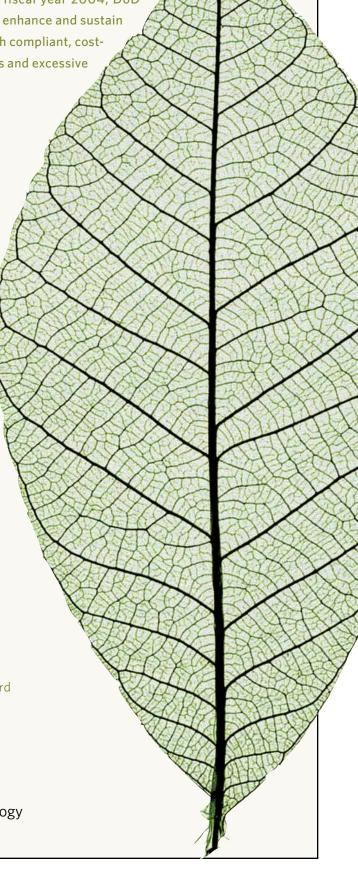
Green Procurement

The objectives defined in DoD's GPP policy are to:

- Educate all appropriate DoD employees on the requirements for federal green procurement preference programs, their roles and responsibilities relevant to these programs and DoD's GPP, and opportunities to purchase green products and services
- Increase purchases of green products and services consistent with the demands of mission efficiency and cost-effectiveness, with continual progress toward federally established procurement goals
- Reduce the amount of solid waste generated
- Reduce consumption of energy and natural resources
- Expand markets for green products and services

For more information visit the Acquisition & Technology Web site at <*www.acq.osd.mil/at*>.

that the last course of action, and use it only if unforeseen obstacles have arisen. Provide encouragement and help, if needed, but try to maintain the original goals.

Sometimes posting the goals publicly in the workspace helps. This is best done with simple numerical goals. It provides an everyday reminder and provides an opportunity for team members to provide encouragement and support for each other. You have to be very careful in making goals public, though, as posting them could create problems by showing unevenness in assignment of goals and highlighting failure, if that happens. There are other possible ramifications. It all depends on you, your people, the environment, the project, and the goals.

If you want to try this with the whole project team and team goals, the same process works. Have the team set goals as a group. In this case, posting the goals is always a very good idea. It lets everyone know what is expected and how the team is progressing. If the goals are quantitative, showing progress is a great way to keep up enthusiasm and motivation. When things aren't going well, stronger members of the team will sometimes step up and help weaker members. Encourage that. Remind everyone it's a team effort, not an individual competition.

You should also be setting up your own goals—individual and project team—with your boss. Team goals require success from the people you manage. It helps to share your project team goals with your team to let them know you believe in them and their ability to meet the goals. That is part of good team communication. Without the project team's support, you and the project are almost guaranteed to fail.

You should also establish personal goals, which may be significantly different from the goals set with your boss. For example, one goal might be to get a team member promoted. Another might be to try to balance your personal and professional life better by not working weekends so that you can spend time with your family. Another might be to communicate better.

The Power of Paper (or PDA)
Obvious maybe, but it really helps to keep a couple of lists in a notebook or on your PDA. The first is a to-do list. You'll be adding to it daily, and a goal is to check off at least one thing daily too (so make sure that larger goals are broken up into subgoals—"knock $500,000 off spending over the next

13 THETA By Dan Ward, Chris Quaid, Gabe Mounce, and Jim Elmore

The Evolution of Manuals

two years to make the budget" might be daunting, but a but subgoals of "cut four hours of overtime" and "get one budget-cutting suggestion from the team" might be doable. The second list is for accomplishments, large and small. That list serves two purposes. First, it helps your own self-esteem to see what you have actually accomplished over time. Second, when evaluation time rolls around, you have documentation to prove your worth.

As an aside, I suggest that you also keep an accomplishments list for your people. They may not do it themselves, and when it comes to evaluation time, they may not be able to give you concrete examples of their successes. I had one supervisor who kept a 3 x 5 card for each of his employees (this goes back to the dark ages, before desktop computers). Whenever he saw or heard something good about a person's work, he noted it. Then at evaluation time, he was able to remind the person of accomplishments, many of which he or she had forgotten. My guess is that he noted bad things there too, but that is another story.

The bottom line is to expect great things from your people and let them know your expectations. Set goals with them and monitor progress. Let the expectations be a positive self-fulfilling prophecy, and enjoy the successes of your people because they reflect well on you as well as on them.

MEDICAL COMMUNICATIONS FOR
CASUALTY CARE (MC4)
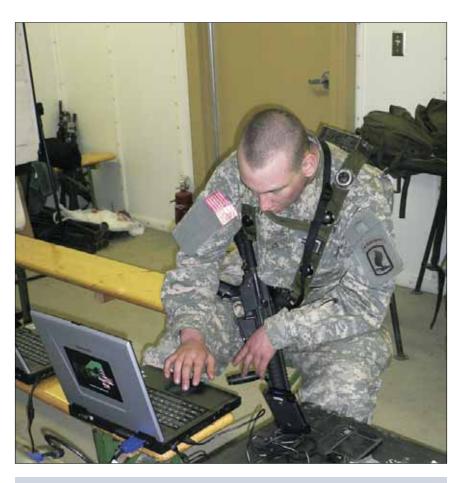## The Hidden Benefits of Electronic Medical Records

Lt. Col. Edward T. Clayson, Ph.D.

The Department of Defense's transformation from capturing medical records on the battlefield using paper forms to ruggedized computers has garnered much attention over the past five years. By making this philosophical change, the DoD took a giant step forward in advancing the healthcare provided to each Service member in the combat zone. Specifically, the implementation of these tactical information systems—Medical Communications for Combat Casualty Care (MC4)—has changed the landscape in terms of how medical information is consumed, shared, and used to improve situations in the combat zone. Physically, the medical landscape has expanded, and so has the use of MC4 systems, aiding all level three facilities in Southwest Asia, more than 200 facilities across Iraq and Afghanistan, as well as contingency operations in Europe, Egypt, and South Korea. This expansion includes the full use of the system by Air Force and special forces units and spans six continents.

Since 2003, as more deployed medical staff began to embrace the use of MC4,

The use of MC4 systems during medical training exercises has proven essential to familiarizing deployable doctors and nurses with the system they use in theater.
MC4 Photo

they also asked for additional functionality. At about the same time, MC4's reputation for being able to successfully implement, train, field, and support IT solutions on the battlefield became an opportunity for other DoD programs to pursue integration. Soon, new applications and system improvements would make their way onto the MC4 platform.

With the heightened prevalence of post-traumatic stress disorder in 2005, the Office of the Surgeon General tasked MC4 to add a digital form of its post deployment health assessment onto its handheld and laptops. The form requires deployed Service members to answer a series of questions before they return home. Previously, these assessments were completed using computer systems that had been fielded without a sustainment plan, leaving the former legacy system unsupported. Today, more health assessments are completed using MC4 systems than any other method. As

a result of the data collected, hundreds of Service members are now under evaluation for symptoms of post-traumatic stress disorder that might have otherwise gone unnoticed.

In 2007, the addition of the Joint Theater Trauma Registry application to the MC4 system streamlined trauma data collected on the battlefield to researchers who use the information to implement solutions for the battlefield. Previously, it took months for data collected on paper forms to be studied. Now, the electronic collection of battlefield trauma will dramatically reduce the life cycle of when new products and procedures can be discovered to save more lives of frontline soldiers.

As medical teams and commanders took ownership of the system, software and hardware improvements were made to support their needs. As such, units requested the use of the improved system, and not just units preparing to deploy

to Southwest Asia. Units participating in training scenarios around the world have begun using MC4. Training events, such as Ardent Sentry in the United States and Operation Bayonet Strike in Europe, brought new users in contact with MC4 systems. Using the medical recording systems during non-threatening situations has allowed medical personnel to become familiar with the system before reaching the desert. This type of exposure has laid the foundation for a global classroom.

The military looks to get medical forces units trained quicker and more efficiently. With MC4 being used during training exercises, and indoctrinated in medical classrooms at home and abroad, users face a more level learning slope on how to use the system to gain an advantage in the field. The increase in experienced users has already equated to system improvements through the funneling of user feedback in the field to system integrators in the States. The expanding classroom will also have a profound effect on future capabilities, as the DoD and the Veterans Administration continue to strive toward one IT solution for its medical data repository. MC4's vast use on the battlefield will continue to provide a working case study for their success.

While obvious electronic medial record efforts remain on the forefront, 32,000 users can see the tangible expansion of MC4—28,000 systems fielded, 250 units trained, 8 million medical records captured—the true rewards often go unnoticed. The use of MC4 has directly led to improved and timely care administered to Service members on the battlefield, reduced the amount of paperwork created, time saved creating reports and finding new methods to saving Soldiers lives, and reduced costs. Being a conduit for Service members having a lifelong record of healthcare is more than about computers and software. It's about training and supporting the use of technology with open ears, and expanding the playing field with a vision in mind that what is done today will have a ripple effect on healthcare on the battlefield.

Clayson was the MC4 commander from 2005 to 2008.

DEFENSE SUPPLY CENTER RICHMOND
(SEPT. 4, 2008)
DLA Cherry Point Activates
Debra Bingham
CHERRY POINT, N.C.—An activation ceremony took place Sept. 4 at Cherry Point, N.C., marking the transfer of approximately 150 employees from the Fleet and Industrial Supply Center Jacksonville detachment to Defense Logistics Agency.

Air Force Brig. Gen. Andrew Busch, commander of Defense Supply Center Richmond, presided at the ceremony in the Marine Corps Air Station training building. DSCR is Defense Logistics Agency's aviation supply and demand chain manager and will manage DLA Cherry Point activities.

During the ceremony, Busch passed the DLA flag to Navy Cmdr. Eric Schoch, who is the officer in charge of DLA services at Cherry Point. Schoch previously served as site director at the FISCJ detachment at Cherry Point.

A 2005 Base Realignment and Closure mandate directed Service-run maintenance depots, industrial sites, and shipyards to transfer supply, storage, and distribution functions to DLA to optimize military readiness.

"Public law is why I'm here today," Busch said. "It's not about doing DLA takeovers, but to form partnerships—to work together with retail supply professionals and find inventory efficiencies that will support Col. Smith [*commanding officer of Fleet Readiness Center East*]. We want to build on a sense of trust for DLA and leadership."

Schoch congratulated the new DLA employees on their outstanding performance during the last four years and encouraged them to continue their legacy of service.

"We can not and will not rest on our laurels," Schoch said. "With the aging of the aircraft population, support of out-of-production aircraft, requirements for reduced turnaround time for repair, global competition for material, and a reduced manufacturing base—to name a few hurdles—your job is getting harder. But, there is no other workforce that I would rather be meeting those challenges with than you."

The Navy employees transferred in place to Defense Logistics Agency and will continue to provide supply, storage, and distribution support to maintenance activities at Navy Fleet Readiness Center East. FRC East is one of six fleet readiness centers operated by the Navy and provides maintenance, engineering, and logistics support on a variety of aircraft, engines, and components for all military services.

DLA, Commander Fleet Industrial Supply Centers, and the Navy Fleet Readiness Center worked together to smooth the transition for realigned employees, while ensuring continuity of service to warfighters. Similar transfers have already taken place at Air Force air logistics centers at Robins Air Force Base, Ga., and at Tinker Air Force Base, Okla. DLA Cherry Point is the first Navy site to activate under the BRAC mandate.

"Becoming part of the DLA family today has also opened up many new doors and opportunities," Schoch said. "We strive for continuous improvement and the realm of the possible has grown. Look for efficiencies, look for improved processes, look for enhanced integration of activity among all levels of supply and maintenance, and let your ideas be known."

Bingham writes for Defense Supply Center Richmond Public Affairs.

U.S. TRANSPORTATION COMMAND NEWS SERVICE (SEPT. 3, 2008)
USTRANSCOM Deploys Container Security System to Better Protect U.S. Military Supply Chain
SCOTT AIR FORCE BASE, Ill.—The United States Transportation Command recently deployed a container security system that detects tampering and helps protect military container shipments moving from Afghanistan to Pakistan.

USTRANSCOM introduced the CommerceGuard container security system, provided by GE Security, Inc., a business of GE Enterprise Solutions, to better protect its container shipments.

Based at Scott Air Force Base, Ill., USTRANSCOM directs and supervises execution of the military supply chain for the Department of Defense. The command required quick action to add high-technology intrusion detection and tracking to containers being transported to the port of Karachi in Pakistan. GE Security responded immediately to USTRANSCOM's request for a reliable container security solution.

"We're pleased that CommerceGuard is proving effective for USTRANSCOM. Within three weeks of receiving their call, we were able to get reliable container intrusion detection deployed in the Afghanistan-Pakistan trade lane," said Randy Koch, president and CEO of CommerceGuard.

The system provides shipment security throughout the supply chain.

USTRANSCOM contractors use CommerceGuard handheld readers at specific checkpoints in the supply chain to read container security devices on the command's containers. The devices report the security status of each container, alerting USTRANSCOM if doors have been opened without authorization. Logistics managers can use the data to determine when and where containers were opened.

U.S. military personnel mount the container security devices inside the container doors when the containers are filled with supplies, then use a handheld reader to arm the devices for shipment.

"In addition to heightening our security measures with intrusion alerts, the data made available through the CommerceGuard global information network adds efficiency to our processes by confirming that our containers are secure throughout this vital supply chain. This allows our supported commanders to focus their attention on operations," said Navy Vice Adm. Ann Rondeau, USTRANSCOM acting commander. "We have been pleased with the quick deployment, ease of use, and effectiveness of this system."

DEPARTMENT OF DEFENSE NEWS RELEASE (SEPT. 10, 2008)
DoD Announces Termination of KC-X Tanker Solicitation
The Department of Defense on Sept. 10 notified the Congress and the two competing contractors, Boeing and Northrop Grumman, that it is terminating the current competition for a U.S. Air Force airborne tanker replacement.

Secretary of Defense Robert Gates, in consultation with senior defense and Air Force officials, has determined that the solicitation and award cannot be accomplished by January 2009. Rather than hand the next administration an incomplete and possibly contested process, Gates decided that the best course of action is to provide the next administration with full flexibility regarding the requirements, evaluation criteria, and the appropriate allocation of defense budget to this mission.

Gates stated, "Over the past seven years, the process has become enormously complex and emotional—in no small part because of mistakes and missteps along the way by the Department of Defense. It is my judgment that in the time remaining to us, we can no longer complete a competition that would be viewed as fair and objective in this highly charged environment. The resulting 'cooling off' period will allow the next administration to review objectively the military requirements and craft a new acquisition strategy for the KC-X."

In making this decision, it was concluded that the current KC-135 fleet can be adequately maintained to satisfy Air Force missions for the near future. Sufficient funds will be recommended in FY09 and follow-on budgets to maintain the KC-135 at high mission-capable rates. In addition, the department will recommend to the Congress the disposition of the pending FY09 funding for the tanker program and

plans to continue funding the KC-X program in the FY10 to FY15 budget presently under review.

Picatinny's GPS-Guided Excalibur Artillery Round Deemed 'Amazingly Accurate' by Troops
Audra Calloway

From taking out top al-Qaeda operatives to safely firing within 50 meters of dismounted infantrymen, the Picatinny Excalibur projectile is already paying dividends a year after its initial fielding to soldiers.

When Excalibur first debuted in Iraq in May 2007, it became the Army's first all-weather, precision-guided artillery round. While the Excalibur Program Office at Picatinny estimates approximately 70 of the groundbreaking Excalibur rounds have been fired in Iraq, Capt. Victor Scharstein of Alpha Battery, 2nd Battalion, 82nd Field Artillery, 3rd Brigade Combat Team, commanded one of the original units to field the round.

Scharstein used Excalibur multiple times in the Diyala province of Iraq. Operation Arrowhead Ripper, the deliberate clearance of Baquba, was one mission he recalls using the precision round.

"It was an urban setting, it was extremely bad weather, and there were no aircraft able to fly that day," he said.

Because of Excalibur, his unit was able to fire an artillery round at a target within 50 meters of infantrymen on the ground who were clearing the area.

"Had we not had Excalibur, we wouldn't have been able to do that," he said. "We wouldn't have been able to engage that target."

While the unit could have engaged the target with conventional artillery, that would have risked significant collateral damage and put civilians and U.S. soldiers at risk, Scharstein said.
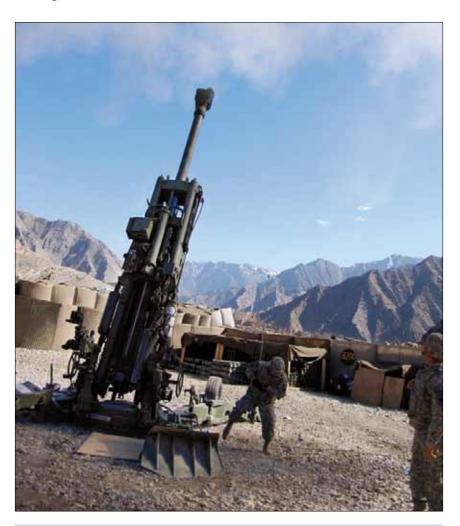
Overall, Scharstein said the round was "amazingly accurate" with his fires producing a 92 percent success rate, mean-

ing that the fired round hit or had an effect on the intended target 92 percent of the time.

The rest of the Army also began seeing the powerful effects of Excalibur almost immediately after its debut.

In July 2007, it was used to take down a top target for al-Qaeda south of Baghdad, Iraq, according to a July 16, 2007, news release by Multi-National Division–Central Public Affairs.

This al-Qaeda in Iraq cell leader was responsible for improvised explosive devices, vehicle-borne IEDs, and indirect fire attacks on coalition forces in Arab Jabour.

Pvt. Corey Rodriguez pulls the lanyard on the M-777A2 during the first firing of the Army's new GPS-guided Excalibur Round Feb. 25 at Camp Blessing, Afghanistan.
Photo by Army Sgt. Henry Selzer

The operative was in a meeting house when the 1st Battalion, 9th Field Artillery Regiment fired two Excalibur rounds and destroyed the house, the release said.

Such precision can be attributed to Excalibur's global positioning system technology.

When the projectile leaves the gun, it does a self-test, acquires its signal, and uses the signal to find its target, Scharstein said.

This precision accuracy has "brought artillery back into the close urban fight," Scharstein said. "Excalibur gives you the confidence that you can support soldiers in the close fight.

"With conventional rounds, the first few rounds may not be on target so there has to be some adjusting," he added. "With Excalibur, as long as I have an accurate target location, I know I'm going to get an accurate hit every time."

"The accuracy of the system is unbelievable," he said. "It's incredibly accurate."

Excalibur Range

Another positive of Excalibur is its consistent ability to engage targets at a variety of ranges, Scharstein said. Generally, the farther away from a target you are, the less accurate the fires become, Scharstein said. However, with Excalibur,

"you can shoot it at its minimum or maximum range and you'll get that same level of accuracy."

Excalibur, which debuted in Afghanistan in February 2008, currently has an accuracy of less than 10 meters at ranges out to 14 miles, said Lt. Col. Joseph Minus, Excalibur program manager at Picatinny Arsenal. However, the next phase of Excalibur, called Ib, will have an accuracy requirement of less than 10 meters out to 24 miles, he said.

Firing Excalibur

Excalibur can be fired from M109A6 Paladins and M777A2 Howitzers. The Excalibur program is also a cooperative program with the Kingdom of Sweden, which is developing the Archer Cannon System that will also be capable of providing precision fires with Excalibur, according to Minus.

Scharstein fired his Excalibur rounds from a Paladin and said firing Excalibur was similar if not easier than firing conventional artillery. Because Excalibur is accurate, he said, operators do not need to frequently adjust fire to hit a target.

"It's very upfront …. I didn't find it very difficult and I never heard any complaints from my soldiers …. They loved the round and they loved firing it," Scharstein said.

Calloway writes for Picatinny Public Affairs.

The Joint Strike Fighter was designated the F-35 Lightning II in July 2006. U.S. Air Force photo

Air Force, Navy Officials Agree Upon F-35 Depot Workload

WASHINGTON—Air Force and Navy officials signed a memo Sept. 16 identifying a new process for allocating F-35 Lightning II depot repair workloads.

The new process takes into account Service competency and experience in determining workload allocation.

"This was truly a joint effort on the part of the Air Force and the Navy to agree on the majority of the depot workload, ensuring we will have depot repair capability up and running when we need it," said Debra Walker, the deputy assistant secretary for logistics. The F-35, also known as the Joint Strike Fighter, is the largest joint program in the history of the Department of Defense.

For 80 percent of the major system categories on the Joint Strike Fighter, the Services were able to reach early agreement on workload allocation. This agreement was formalized in an Air Force/Navy jointly signed letter to the Joint Program Office for final approval. For the remaining 20 percent, which includes software and some avionics systems, a source selection team will be formed, comprised of representatives from all the Services and the Joint Program Office.

Some of the systems the Air Force and Navy officers were able to agree on up front include airframe and engines. The Joint Strike Fighter airframe maintenance, which will be up and running in 2012, will be located at the Fleet Readiness Center East at Marine Corps Air Station Cherry Point, N.C., and the Ogden Air Logistics Center at Hill Air Force Base, Utah. This includes associated doors, panels, covers, and control surfaces.

Engine maintenance, which will also stand up in 2012, will be at the Oklahoma City Air Logistics Center at Tinker AFB, Okla. A follow-on engine standup in 2014 will be at the Fleet Readiness Center Southeast at Naval Air Station Jacksonville, Fla.

The engine lift system, which will be used in the Marine Corps variant aircraft, will be maintained beginning in 2014 at the Fleet Readiness Center East-MCAS Cherry Point.

Officials Enter Agreement to Create Aerospace Complex

TINKER AIR FORCE BASE, Okla.—Air Force officials announced Sept. 25 that the Service has signed a long-term lease agreement with Oklahoma County that will enable the Oklahoma City Air Logistics Center to establish the Tinker Aerospace Complex.

The lease, which was signed Sept. 24, covers approximately 407 acres of land formerly occupied by the General Motors Plant, including 3.8 million gross square feet of real property, of which 3.5 million square feet is industrial and administrative space and is expected to improve the efficiency of current OC-ALC operations.

Acting Secretary of the Air Force Michael B. Donley praised the effort as another example of how the state of Oklahoma and Tinker AFB's surrounding communities work together in an unprecedented partnership to preserve and enhance national security.

"The Air Force is very pleased to enter into a low-cost, long-term lease agreement with Oklahoma for the prior GM facility south of Tinker AFB," Donley said. "This facility will enhance operations at Tinker AFB and provide long-term benefits to the Air Force."

"This lease agreement will reduce the scope of projected military construction projects needed to replace substandard facilities, improve base energy usage, and provide flexibility for mission needs," said Maj. Gen. Loren Reno, OC-ALC commander. "It presents a tremendous opportunity for the air logistics center to improve the overall working environment for Team Tinker, and support our ability to secure the right workload for the ALC and help us better support the warfighter."

The property was purchased from General Motors by the State of Oklahoma and Oklahoma County through a bond election in May with the intent of making the property available to Tinker AFB through a low-cost, long-term lease.

The Tinker Aerospace Complex will host current 76th Maintenance Wing operations, as well as other Department of Defense missions.

Base officials noted that in addition to improving aircraft sustainment, the complex will reduce taxpayer costs for facilities maintenance by allowing the base to mothball and eventually demolish 21 substandard facilities directly related to the Tinker Aerospace Complex. It will also improve airfield

An airman from the Memphis Air National Guard guides an Army high-mobility engineer excavator into the back of a C-5 Galaxy transport at Charleston Air Force Base, S.C., Sept. 29, 2008. U.S. Air Force photo by Airman 1st Class Timothy Taylor

safety since many of these facilities are in the runway clear zones.

"We will begin moving maintenance operations into the Tinker Aerospace Complex very quickly and anticipate having some of the processes running by summer 2009," said Jeff Catron, Tinker Aerospace Complex program manager.

SPECIAL TO AMERICAN FORCES PRESS SERVICE (OCT. 2, 2008)

Air Force Starts Transporting New Army Vehicles

Air Force Staff Sgt. Robert Sizelove

CHARLESTON AIR FORCE BASE, S.C.—Airmen at Charleston AFB began shipping six new Army high-mobility engineer excavator vehicles Sept. 29 to warfighters in Southwest Asia.

Charleston is the first Air Force base to receive and ship the HMEE, a newly developed construction vehicle that provides a wide range of mobility while affording more protection

for the operator than standard road repair and construction equipment, officials said.

"The purpose of the high-mobility engineering excavator is exactly that—mobility," said Chris Saucedo, the general manager of the company awarded the contract to build the HMEE. "The machine drives at 60 mph both on and off road."

The concept has been proven with less mobile equipment in terms of rapid road repair, Saucedo said. "Now, you have a machine that can actually integrate into patrols [and] maintain convoy speeds, and it doesn't require additional lift assets," he added.

Because it can open up roads, the HMEE lets commanders bring logistics capabilities into their tactical patrols, dramatically increasing mobility, Saucedo said. It also can create obstacles for the enemy, and it contributes to survivability

with the ability to provide water and supplies, build berms, and lay electrical lines, he added.

"I want every troop in harm's way to know that there is a highly dedicated team behind the HMEE, and we're very optimistic and very fortunate to be supporting the troops," Saucedo said. "It's been a long road, but we're all behind you and pulling for you 100 percent."

Air Force Staff Sgt. Heather Kern, assigned to the 437th Aerial Port Squadron, said the vehicles will give deployed engineers a greater measure of protection. "What's great about these machines is that they are mine-resistant, and they give our guys over there who are driving them a precious few seconds to get out of harm's way if they do get hit by a mine or improvised explosive device," she said.

Charleston was selected to process the HMEEs for shipment because it's the closest base to the production site in Savannah, Ga.

"It's hard work as far as the loading of the aircraft [*is concerned*]," Kern said. "It's very physical, but it's worth every minute of it. It's very important to make sure the guys on the ground in Iraq and Afghanistan have the equipment they need."

In 2007, the contractor received a $230 million procurement contract from the Army to produce 800 HMEEs, all of which will be built at the Savannah facility. The vehicle is the result of a four-year program of design, development, and testing between the manufacturers and the Army. Charleston airmen will continue to ship the vehicles as they become available.

Sizelove writes for the 437th Airlift Wing Public Affairs Office.

DEFENSE TECHNICAL INFORMATION CENTER NEWS RELEASE (OCT. 6, 2008)
DoDTechipedia Launched
FORT BELVOIR, Va.—The Defense Technical Information Center and the director, Defense Research and Engineering announce the launch of *DoDTechipedia*, a Department of Defense science and technology wiki. At the direction of Under Secretary of Defense for Acquisition, Technology and Logistics John J. Young Jr., DDR&E tasked DTIC® to spearhead the development of this DoD online collaborative encyclopedia.

DoDTechipedia ensures greater transparency and communication among DoD scientists, engineers, program managers, and warfighters. This tool enhances the DoD's ability to collaborate across the enterprise, identify solutions for technology challenges, and ensure taxpayer dollars are spent in an efficient manner.

DTIC Administrator R. Paul Ryan said, "DoDTechipedia is an opportunity for the Department of Defense to take advantage of wiki technology to share science and technology knowledge more efficiently."

A live forum, DoDTechipedia allows users to see and discuss innovative technologies throughout DoD and emerging technologies from the academic and private sectors. Its features include a quick registration process using a Common Access Card; a "Sandbox" for users to practice posting and editing content; acronyms/definitions; technology areas where discussions about S&T investment areas or enabling technology take place; interest area pages for DoD personnel and DoD contractors to work together on challenges and solutions; blog capabilities; hyperlinking of terms; and the ability to upload attachments. Collaboration on DoDTechipedia today, will ensure the most advanced technologies get to the warfighter tomorrow.

To access the DoDTechipedia Web site (logon required), servicemembers, DoD employees, and DoD contractors can visit <https://www.dodtechipedia.mil>.

Media contact: Sandy Schwalb, 703-767-9205, e-mail pao@ dtic.mil.

ARMY NEWS SERVICE (OCT. 8, 2008)
Maverick Missile System Work Increasing
Anthony Ricchiazzi
Technicians will see their mission to overhaul, repair, and test Maverick missile guidance and control systems (GCS) grow from about 300 to more than 700 per year.

The Air Force, Navy, and Marine Corps use the missile, which is also sold to foreign nations.

The AGM-65 Maverick is a tactical, air-to-surface guided missile designed for close air support with fire and forget capabilities. It is used against a wide range of tactical targets, including armored vehicles, ships, transportation equipment, and stationary targets such as buildings and bridges.

"There are three versions of the AGM-65 Maverick Missile, and the differences are all related to the guidance and control system," said Steve Janiga, chief of the Maverick Missile Branch.

"There is the first generation electro-optical/television version, the imaging-infrared (IIR) version, and the laser. All versions can track a moving target, but the laser has become the weapon of choice for all of the Services when pinpoint accuracy is needed."

The branch is part of the command, control, and computers/avionics directorate's tactical missile division. The television version uses a camera to track targets. "It will be replaced by a CCD [*charged-coupled device*] imager, which uses an integrated circuit like the one in a camcorder," Janiga said. The CCD upgrade will provide greater reliability.

The imaging infrared version can track a target by locking onto the target's heat source to overcome darkness and inclement weather.

The laser version uses ground or airborne laser designators to track a target and has pinpoint accuracy, Janiga said.

The Air Force manages the program, but all the Services send work to Tobyhanna.

The Navy is sending imaging infrared GCSs to the depot for the first time, contributing to the rise in workload. Janiga said the branch's highest production rate was 100 GCSs per month. "We could do that again, if necessary," he noted.

Imaging infrared GCSs account for 80 percent of the workload, television 15 percent, and laser 5 percent. Technicians repair the circuit cards for all three GCS versions to the component level and replace cryo engines, image detectors, and torquer motors.

Once repairs are made, the GCSs are tested using a variety of methods to make sure the missile seeker tracks targets accurately, correcting for pitch, yaw, and roll.

The longest test is for the television version, in which hundreds of tests are conducted. The IIR and laser GCSs are tested using automated test systems.

"Every GCS gets a custom alignment," Janiga noted. "If a circuit card is repaired or replaced, the rest of the components are realigned so they function seamlessly together."

Tobyhanna Army Depot is the largest full-service command, control, communications, computers, intelligence, surveillance, and reconnaissance maintenance and logistics support facility in the Department of Defense. Employees

Soldiers attach a testing unit to the guidance system on a Maverick missile. The testing unit verifies the Maverick can identify and steer to a target. U.S. Air Force photo by Master Sgt. Andrew Gates

Robert Stanaback, electronics technician, tests a gyro optics assembly of a Maverick missile infrared guidance and control system. Photo by Steve Grzezdzinski

repair, overhaul, and fabricate electronics systems and components, from tactical field radios to the ground terminals for the defense satellite communications network.

Tobyhanna's missions support all branches of the Armed Forces. The depot is the Army Center of Industrial and Technical Excellence for communications-electronics, avionics, and missile guidance and control systems; and the Air Force Technology Repair Center for ground communications and electronics. About 5,800 personnel are employed at Tobyhanna, which is located in the Pocono Mountains of northeastern Pennsylvania.

SPECIAL TO AMERICAN FORCES PRESS SERVICE
(OCT. 10, 2008)
Cartwright Urges Improving Technological Advances
Air Force Master Sgt. Adam M. Stump
MARINE CORPS BASE QUANTICO, Va.—The U.S. military needs to continue working on technological advances to fight a pair of wars that are "winnable," the Vice Chairman of the Joint Chiefs of Staff said Oct. 9.

Marine Corps Gen. James E. Cartwright, speaking to a group of Marine Corps University students during the Erskine lecture series, said the U.S. military's priority is to win the current conflicts in Iraq and Afghanistan and be ready for future challenges and threats.

Addressing the current wars in Iraq and Afghanistan, Cartwright said, "This fight is winnable."

The Service chiefs are doing a great job preserving, training, and equipping the force, Cartwright said. The Army, in particular, has done an amazing transformation by turning from a garrison structure to a more expeditionary force, he said.

"We're taking an Army and completely transforming it," Cartwright said. The Army has switched from a division construct to a brigade construct, all while fighting two wars.

"Those are huge changes, larger than anything this Army has done since World War II," he said.

The reserve forces also have undergone a notable transformation, turning from a strategic mobilization force into an operational force, all while growing larger than the active duty side of the military.

All of this, the vice chairman said, has transformed the U.S. military into an experienced and more capable force. With the increased experience and capability, Cartwright said, the military will be more able to adapt to a future conflict.

"We might have to spend a couple of months to be ready to go to some different kind of conflict, but it's going to be a couple of months, not a couple of years," he said.

The vice chairman said another major advance during the past few years has been unmanned aerial vehicles. Cartwright said the United States has gone from a handful of UAVs at the start of the war in Iraq to currently hundreds. However, he said, UAVs need to develop a common ground station to communicate better.

In addition, the general said, UAVs need to be used more efficiently, and policies need to be examined so UAVs can use different tactics. The general added that the platform also needs to become an all-weather capability.

Another challenge the U.S. military is facing is cultural and language training. While the military has ramped up the training capability, Cartwright said, the United States still is behind allies because of a "speak my language or you're dumb" mentality.

A great model of success is the international package delivery company—UPS—which runs an aggressive cultural and language training program, the general said. UPS puts employees into the program before stationing them overseas, he said.

"We've got to get in the same boat," Cartwright said.

Stump serves in the Joint Chiefs of Staff Public Affairs Office.

ARMY NEWS SERVICE (OCT. 15, 2008)
FCS Gets Full Funding in Authorization Act
C. Todd Lopez
WASHINGTON—The testing of Future Combat Systems equipment and testimonials from soldiers using it may have helped the program receive full funding for the first time.

President Bush signed the National Defense Authorization Act for Fiscal Year 2009 Oct. 12. The new bill includes some $3.6 billion in funding for FCS, the full amount asked for by the Army. This is the first time Congress has fully funded the Army's FCS request.

"I think it's very notable we received full funding," said Lt. Gen. Stephen Speakes, deputy chief of staff for G-8, during a conference Oct. 8. "And we think it's a factor that we have capabilities in the hands of soldiers ... where our critics and supporters alike can talk to the soldier who is a combat-hardened veteran, [and] who does have a unique perspective

Army Pvt. Michael Hartz, a member of the 3rd U.S. Infantry at Fort Myer, Va., learns about the Micro Air Vehicle from Dan Fouts of Honeywell during the 2008 Association of the United States Army Annual Meeting and Exposition, Oct. 6-8 in Washington, D.C. The MAV is one of the "surrogate" technologies currently in Iraq. The MAV is strikingly similar in appearance to the Future Combat System's Class 1, Block 20 unmanned aerial vehicle. Though the MAV lacks some of the communications capability the FCS UAV will have, it was developed from FCS technology. Photo by C. Todd Lopez

about what their needs were that were unmet when they were last in combat."

Speakes said moving away from presentations and slide-shows and allowing both FCS supporters and detractors to see the "Spin Out 1" equipment in the hands of soldiers has allowed everybody to get a more realistic view of what FCS is about.

It "has had a powerful affirmative effect in instilling confidence that the Army has it right, with delivery capability on time and on target," Speakes said. "And this [is] absolutely essential to the needs of the Army today and tomorrow that we continue to support this program."

Though there is no FCS equipment currently in either Iraq or Afghanistan, there is "surrogate" equipment there—about

25 micro air vehicles in the hands of the 25th Infantry Division and also about 1,500 Pacbot robots.

The MAV is similar in appearance to the FCS's Class 1, Block 20 unmanned aerial vehicle. And though it lacks some of the communications capability the FCS UAV will have, it was developed from FCS technology, officials point out.

The Pacbot is similar to the FCS unmanned ground vehicle, though it is heavier and lacks the ability to communicate with the FCS network. It too was developed from FCS technology.

Actual FCS technology is now in the hands of soldiers at the Army Evaluation Task Force at Fort Bliss, Texas. Equipment there includes the actual Class 1, Block 0 UAV, the SUGV, the non-line-of-sight launch system, and kits to network Humvees to the FCS network.

While not part of FCS, but instead a complementary system, the ground soldier ensemble from PEO Soldier is also at the AETF. The ensemble will eventually hook soldiers into the FCS network—making soldiers themselves a future combat system.

Soldiers at the AETF have already conducted testing on FCS equipment while acting as a heavy brigade combat team. Now they are resetting to test as an infantry unit. That testing leads up to "limited user testing" in summer 2009. The LUT is the brigade-size test that will prove usability of the equipment and pave the way to the "milestone C" decision, which officials say will allow the program to move toward production of equipment for fielding in 2011 with infantry brigades.

"That will eventually lead to the production testing in 2011 that goes to the 1st Infantry Brigade Combat Team," said FCS Program Manager Maj. Gen. Charles Cartwright. "Once that IBCT is done, we will ramp up to about four IBCTs, both active and Guard, across the Army to finish out all the IBCTs."

Eventually, as many as 43 IBCTs across the Army and National Guard will be equipped with the FCS components included in Spin Out 1 of FCS—the equipment currently in testing at AETF.

By 2015, officials expect the first FCS Brigade Combat Team to be equipped with the full slate of FCS equipment, including its manned and unmanned vehicles, its UAVs, and its network. Until that time, additional components will be pushed out to the force, including such things as Multifunctional Utility/Logistics and Equipment, known as MULE, and the Class IV UAV.

DEPARTMENT OF DEFENSE NEWS RELEASE
(OCT. 16, 2008)
DoD Announces Non-Certification of Armed Reconnaissance Helicopter Program
The Department of Defense on Oct. 16 notified the Congress and the contractor, Bell Helicopter, that it will not certify the U.S. Army Armed Reconnaissance Helicopter (ARH) program for continuation.

Under Secretary of Defense for Acquisition, Technology and Logistics John Young, in consultation with senior defense and Army officials, has determined that the fundamental cost and schedule basis underlying award of the ARH contract is no longer valid.

The ARH contract was awarded for an expected development cost of $359 million and a procurement average unit cost of $8.56 million. Currently, DoD estimates that development will cost $942 million, and the procurement average unit cost will be $14.48 million. Delivery of ARH to the Army was originally scheduled to take place by 2009, but the current projection is for 2013.

"Rather than continue this program", Young said, "I have decided that the best course of action is to provide the Army with an opportunity to define a coherent, disciplined Kiowa Warrior helicopter replacement program, and to obtain more rigorous contract terms for its development."

Secretary of the Army Pete Geren stated, "The cost and schedule that were the focus of the decision to award the contract to Bell Helicopter are no longer valid. We have a duty to the Army and the taxpayer to move ahead with an alternative course of action to meet this critical capability for our soldiers at the best price and as soon as possible."

DEPARTMENT OF DEFENSE NEWS RELEASE
(OCT. 20, 2008)
United States, Italy Sign Procurement Accord
Secretary of Defense Robert M. Gates and Italian Minister of Defense Ignazio La Russa signed an updated Reciprocal Defense Procurement Memorandum of Understanding on Oct. 20, 2008, which allows effective defense cooperation by establishing principles and procedures recognized by both governments for the conduct of defense procurements. Under this agreement, each government provides access to its defense market to the industry of the other country.

The MOU allows each country specific benefits on a reciprocal basis, consistent with national laws and regulations. These include provisions for duty-free certificates and, in most cases, the evaluation of offers without applying price differentials under "buy national" laws.

The United States and Italy have established and maintained understandings relating to reciprocal defense procurement since 1978. The MOU was last extended in November 1990.

The MOU promotes rationalization, standardization, and interoperability of defense equipment with allies and other allied governments. It provides a framework for ongoing communication regarding market access and procurement matters affecting effective defense cooperation.

AIR FORCE NEWS SERVICE (OCT. 24, 2008)

Lasers May Aid Missile Defense, Engine CrackDetection

Maria Callier

ARLINGTON, Va.—Air Force Office of Scientific Research-funded work at the University of Colorado at Boulder could lead to possible future technologies that use the high energy densities of lasers.

Studies by university officials explore how atoms and molecules respond to light pulses, which could show cracks in high-performance engines.
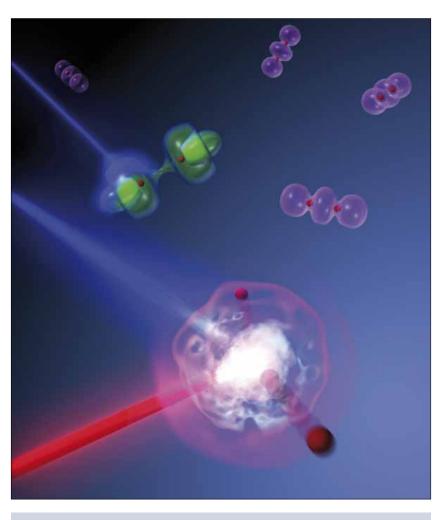
The husband and wife research team of Dr. Henry Kapteyn and professor Margaret Murnane has developed new, practical, laser-like sources in the ultraviolet and soft X-ray regions based on the most extreme form of nonlinear optics.

In this work, an intense femtosecond laser is focused into a gas-filled hollow waveguide. The interaction between the laser field and the atoms in the gas is so strong that electrons are violently accelerated, and then liberate their energy as a coherent beam of X-rays.

Ultrafast coherent beams of X-rays have a myriad of applications in technology and science—from next-generation microscopes that have the capability to image thick samples in 3-D, to understanding how heat flows in nanostructures or how electrons move at interfaces relevant to energy harvesting.

Ultrafast flashes of X-rays can eject an electron from a molecule, leaving the molecule in a super excited state that eventually causes it to break apart. The interaction of atoms and molecules is both useful for making coherent X-rays, which in the future may show previously undetectable cracks in jet turbine blades.
Courtesy image

This research impacts the Air Force by making ultrafast lasers useful in remote sensing, missile defense, and adapted optics. The femtosecond lasers that the couple develops to power the X-ray source are also used in micro-machining and may be applied to aircraft aerodynamics and high-performance engines.

"Our research straddles the boundary between laser science and technology," Murnane said. "We take ideas all the way from conception to integration in systems that can then be used by other scientists. This takes a team of physicists, engineers, and chemists all working together. We discovered that the interaction of atoms and molecules is both useful for making coherent X-rays which, in the future, may image previously undetectable cracks in jet turbine blades."

A major future challenge is to find ways of generating coherent X-ray beams, which require the scientists to control quantum phenomena at very high laser intensities. The challenges have also yielded new demands on the technology the couple uses to meet their goals.

"After a number of years of exploiting the laser technology that we already developed, we are now planning a new push for high-power laser technologies," Murnane said.

Callier is with the Air Force Office of Scientific Research.

DEFENSE ACQUISITION UNIVERSITY STRATEGIC PARTNERSHIPS

Through the years, the Defense Acquisition University has established strategic partnerships with universities and colleges, defense-sector corporations, professional associations, other government agencies, and international organizations. Such partnerships with academic institutions allow DoD Acquisition, Technology and Logistics (AT&L) workforce members to transfer DAU course work toward college and university degrees and certificates. Partnerships with industry, professional societies, government agencies, and international organizations focus on sharing training materials, tools, modules, and training opportunities. A complete database of DAU Strategic Partnerships can be found at <www.dau.mil/about-dau/partnerships.aspx>. In September 2008, two additional partnerships were added to the database:

Baker College of Auburn Hills and DAU validated their mutual long-term commitment to provide improved learning support and knowledge management to the overall AT&L community within the DAU Midwest Region with the signing of a Strategic Partnership Agreement . Baker College Director Dr. Sandra Kay Krug and DAU Midwest Region Dean Travis Stewart signed the agreement at the Baker College of Auburn Hills, Flint, Mich., campus on Sept. 25, 2008. The Baker College Strategic Partnership Agreement will ultimately facilitate the transfer of DAU course credits that have been certified by the American Council on Education toward a Baker College associate of business degree with concentration in management and other bachelor of business leadership degree programs.

Mott Community College and DAU also signed a Strategic Partnership Agreement for the benefit of the overall AT&L community within the DAU Midwest Region. Baker College of Auburn Hills Director Dr. Sandra Kay Krug, on behalf of Mott Community College, and DAU Midwest Region Dean Travis Stewart signed the agreement at Baker College of Auburn Hills, Flint, Mich., campus on Sept. 25, 2008. This Strategic Partnership Agreement will ultimately facilitate the transfer of DAU course credits that have been certified by the American Council on Education toward Mott Community College certificate of achievement and associate of applied science degree programs.

The Baker College Corporate Services (BCCS) campus of Auburn Hills was established in 1989 to service working adults at their place of employment. Currently, BCCS offers a variety of high-end corporate training and college degree programs at 32 corporate sites. Learn more about BCCS at <https://www.baker.edu/departments/admissions/buscorpser.cfm>.

Mott Community College, previously Flint Junior College, was established on Sept. 23, 1923. It currently serves the residents of the 21 school districts in Genessee County, Mich., welcoming over 10,000 students each year. Mott's mission is to provide high quality, accessible, and affordable educational opportunities and services—including programs focused on university transfer, technical and lifelong learning, as well as workforce and economic development—that promote student success, individual development, and improve the overall quality of life in a multicultural community. For more information on Mott degree programs, visit <www.mcc.edu/2_about/about_index.shtml>.

DAU's Midwest Campus in Kettering, Ohio, serves 12 states and holds strategic partnerships with more than 20 civilian universities as well as learning organization agreements with Department of Defense (DoD) and other federal organizations throughout the region. The faculty and staff members of the DAU Midwest Region focus on teaching, research, and performance support (targeted training, consulting, and partnering with agencies). Their agenda includes working with organizations within the region and staying current on major issues and needs of the AT&L workforce throughout the DoD, other federal agencies, and beyond. For more information, visit the Midwest Campus Web site at <www.dau.mil/regions/dau_mw.asp>.

DAU Announces New iCatalog

DAU is pleased to introduce the new Interactive Catalog, or *iCatalog*. The iCatalog, a Web-based version of the university's printed catalog, provides the most current information available to the workforce regarding DAU courses, the acquisition career fields, the Certification and Core Plus Development Guides, and other information traditionally found in the DAU printed catalog.

The iCatalog introduces an interactive-based platform for navigation of catalog information. It has been designed so you can easily find the information you're looking for in just one to three clicks of the mouse. Through the iCatalog, you can also access your component's course registration system and the browse feature of most distance learning (training and continuous learning) courses—a one-stop-shopping experience for all your acquisition career-long learning needs. Try it out at <http://icatalog.dau.mil/>. The iCatalog will continue to improve to meet your needs. If you have thoughts or comments, click on the comment link at the bottom of the iCatalog home page.

From the Office of the Assistant Secretary of the Army (Acquisition, Logistics and Technology)

All Army program executive officers/program and product managers are encouraged to take the Standard Study Number-Line Item Number Automated Management and Integrating System (SLAMIS) Continuous Learning Module (CLM) at <http://clc.dau.mil/>. SLAMIS is a Headquarters, Department of the Army, Web-based data mart with a proven track record of automating and integrating acquisition processes involving multiple functional organizations. It consolidates data from authoritative sources and provides visibility of key information across the life cycle of Army materiel. SLAMIS also provides "cradle to grave" visibility of equipment acquisition from approval of requirements through funding, authorizing, fielding, and sustainment to retirement.

The Defense Acquisition University's SLAMIS logistics module (CLL 034) consists of six modules. The modules may be taken for credit where, upon completion, a certificate will be awarded; or for those interested in an overall knowledge of the system, the browse function allows students to take only those modules in which they have a specific interest. For more information on SLAMIS, visit the SLAMIS Web site at <https://www.slamis.army.pentagon.mil/>.

DAU and NDIA to Sponsor Defense Systems Acquisition Management Course Offering for Industry Managers

DAU and the National Defense Industrial Association will sponsor an offering of the Defense Systems Acquisition Management (DSAM) course for interested industry managers March 2-6, 2009, at the MiraMonte Resort and Spa, Indian Wells, Calif. DSAM presents the same acquisition policy information provided to DoD students who attend the DAU courses for acquisition certification training. It is designed to meet the needs of defense industry acquisition managers in today's dynamic environment, providing the latest information related to:

- Defense acquisition policy for weapons and information technology systems, including discussion of the DoD 5000 series (directive and instruction), and the Defense Acquisition Guidebook.
- Defense acquisition reform and initiatives.
- Defense acquisition procedures and processes.
- The Planning, Programming, Budgeting, and Execution process, and the Congressional budget process.
- The relationship between capability needs determination, resource allocation, science and technology activities, and acquisition programs.

Beginning with the December 2008 DSAM, all course materials will be provided to students on CD ROM. It is highly recommended that you bring a laptop computer with you to the class. If you do not have access to a laptop, please contact the respective meeting planner as soon as possible. There will be a limited number of laptops available for use through NDIA, so please call early.

For further information see "Courses Offered" under "Meetings and Events" at <www.ndia.org>. Industry students contact Michael Dauth, mdauth@ndia.org or 703-247-2593. A limited number of experienced government students may be selected to attend each offering. Prospective government students must first contact Karen Byrd at 703-805-3728 or e-mail karen.byrd@dau.mil prior to registering with NDIA.

Strategic Goals Implementations Plan V2.0 2008

Under Secretary of Defense for Acquisition, Technology and Logistics John Young would like to draw everyone's attention to the AT&L Source Document. This document seeks to provide the acquisition team a foundational set of principles for how AT&L runs its business. You can review the entire AT&L Source Document at <https://akss.dau.mil/documents/policy/20080207_sgip.pdf>.

Young encourages everyone on the acquisition team to use the Source Document principles, approaches, and goals to

guide management and execution of defense acquisition programs.

Defense AT&L Author Wayne Turk Kicks off Speaking Series

Judith M. Greig

Defense AT&L magazine kicked off a projected series of lunchtime author speaking events on Oct. 22, 2008, at the Defense Acquisition University, Fort Belvoir, Va. The first speaker was Wayne Turk, a regular and popular contributor to the magazine since 2004 and the author of *Common Sense Project Management* (ASQ Quality Press, 2008).

Turk, a retired U.S. Air Force officer and management consultant, spoke to DAU faculty, staff, and contractors on "The Human Side of Management," covering a broad range of situations and scenarios. "What I am going to tell you isn't new," he said in opening. "It's common sense and it's based on my own experience."

As in his *Defense AT&L* and other writings, Turk stressed the importance of communication. "Studies show, over and over, that we are weak on communications," he told the audience. Illustrating his point, he said that a 2001 study of

some 20,000 exit interviews determined that the number one reason people leave jobs is "poor supervisory behavior," and one of the biggest factors cited in that poor supervisory behavior was poor communication skills. In a 2002 survey of 1,104 employees in American organizations, 86 percent said their bosses thought they were good communicators, but only 17 percent said their bosses actually did communicate effectively.

Turk also highlighted the issue of managing in a workplace populated by Baby Boomers, Generation X, and Generation Y. "Each group is motivated by different things, driven by different goals, and performs best in a very specific kind of work environment," said Turk. And beyond that, people are individuals, so even within the different groups, what is important to one member may not be important to another. Effectively motivating and managing a multigenerational workforce takes effort and a time commitment, Turk warned, since the key is to work one-on-one with employees or team members to determine their needs and how best to meet them so that individuals are motivated to support the mission to their fullest potential.

Expectations are a significant part of achieving success, Turk told attendees. People live up to expectations, and they also live down to them. Expectations are a self-fulfilling prophecy, he said, supporting his point with facts from a study of trainee welders of equal aptitude conducted by Dr. Albert King. In the study, higher expectations were set for a subset of the group, and sure enough, those welders outperformed their fellow trainees. [The example is discussed in more detail in Turk's article "Let's Go For Self-Fulfilling Prophecies" on page 56 of this issue.]

Turk took questions and comments both during and after his presentation, and there was lively audience participation.

Turk's *Defense AT&L* articles—which are hailed for their commonsense approach and readability—have been widely reprinted in other periodicals, textbooks, and online publications; and they have been used in the classroom at DAU and other teaching facilities. He is currently working on his second book.

Defense AT&L plans further author speaking events, which will be open to a wider audience.

Greig, the former managing editor and executive editor of Defense AT&L *is a contributing editor to the magazine.*

Wayne Turk, a regular and popular Defense AT&L magazine contributor and the author of Common Sense Project Management, speaks on "The Human Side of Management" at a Defense AT&L Meet-the-Author speaking event.

Photo by SSgt. Andre Reynolds, USA

DEPARTMENT OF DEFENSE NEWS RELEASE
(SEPT. 26, 2008)

DoD Finalizes NSPS Regulations

The Department of Defense and the Office of Personnel Management jointly issued the final enabling regulations for the National Security Personnel System, one of DoD's human resources management systems. NSPS was originally authorized by the National Defense Authorization Act for Fiscal Year 2004 and amended by the National Defense Authorization Act for Fiscal Year 2008.

The proposed regulations were initially published in the Federal Register on May 22, 2008, for a 30-day public comment period. The department and OPM received 526 public comments. Nine of the 10 unions having national consultation rights with the department also provided comments. DoD and OPM carefully considered all comments and suggestions. The final regulations incorporate some of the changes and recommendations received and reflect the department's commitment to ensuring fairness and transparency in the performance management system, a key concern of commenters. A comprehensive overview of the comments and the department's response is included in the supplementary information published with the final regulations.

While the final regulations incorporate significant changes, the core features of the personnel system remain intact. The final regulations govern how classification, compensation, and performance management flexibilities will be accomplished. NSPS retains the existing values of the civil service, including merit system principles and veterans' preference, and allows employees to be paid and rewarded based on performance, contributions to mission accomplishment, and market considerations.

The NSPS regulations have undergone significant change since they were first introduced. Most of these changes were motivated by one of three factors: changes mandated in law, changes derived from lessons learned and best practices, and changes driven by public and union comments.

Changes brought about by National Defense Authorization Act for Fiscal Year 2008:
- NSPS will follow existing government-wide rules for:
  —Labor-management relations
  —Disciplinary and adverse actions and employee appeals of adverse actions
  —Staffing and employment
  —Workforce shaping (reduction in force, furlough, and transfer of function).
- Excludes Federal Wage System (blue collar) employees from coverage under NSPS.

- Mandates that all employees with a performance rating above "unacceptable" (rating of 1 on a scale of 1-5)) or who do not have a current performance rating receive no less than 60 percent of the annual government-wide General Schedule pay increase. In accordance with the statute, the balance will be allocated to pay pools for the purpose of increasing rates of pay based on performance at the valued performer (rating of 3) and higher levels.
- Requires that all NSPS employees with a performance rating above "unacceptable" or who do not have a current performance rating receive locality pay in the same manner and extent as General Schedule employees.

Adjustments and clarifications made to lend consistency based on lessons learned and best practices:
- Allow for NSPS coverage of employees appointed for less than 90 days.
- Provides a conversion/movement out process for employees moving to GS positions, to ensure consistent pay setting practices for NSPS employees.
- Allows employees to request reconsideration of an individual job objective rating, in addition to the ability to request reconsideration of the overall final rating of record.
- Grandfathers GS pay retention timeframes for employees covered by GS grade or pay retention rules at the time of their conversion to NSPS.

Additional substantive changes made following publication of the proposed rules in the Federal Register:
- Revises definition of "rate of pay" to ensure consistency and conformity regarding pay issues.
- Requires organizations to share aggregate pay pool results.
- Extends accelerated compensation for developmental positions to positions assigned to the Student Career Experience Program in the student pay schedule.
- Extends within-grade increase "buy-in" provision to Federal Wage System employees who move into NSPS.

DoD will continue to use NSPS flexibilities to build and sustain a high-performing workforce. There are currently approximately 183,000 DoD employees under NSPS. The next DoD organizations will convert into NSPS in the late 2008, early 2009 timeframe, bringing the total number of employees under the system to approximately 200,000.

The final regulations can be found at: <http://edocket. access.gpo.gov/2008/pdf/E8-22483.pdf >.

AMERICAN FORCES PRESS SERVICE (OCT. 1, 2008)
DoD Officials Move Toward Civilian Expeditionary Capability
Jim Garamone

WASHINGTON—Defense Department officials are moving forward with setting up a global expeditionary force for civilian employees, a senior Pentagon personnel official said Sept. 30.

Deputy Under Secretary of Defense for Civilian Personnel Policy Patricia Bradshaw said operations in Iraq and Afghanistan pointed to the roles DoD civilians can play.

"In the past, there were many situations and job opportunities that we have just routinely relied on the military to do, or we have turned to a contractor," she said.

But DoD civilian employees have played crucial roles in operations in Iraq and Afghanistan.

"At the end of the day, when you look at the duties that need to be performed in theater, and particularly as the [*security*] situation becomes more permissive, it provides opportunities for DoD civilians to serve," she said.

More than 16,000 DoD civilians have served in U.S. Central Command's area of operations since 2001, officials said. They have served as engineers, logistics specialists, weapons inspectors, administrative specialists, and on provincial reconstruction teams.

"They have demonstrated the value civilians can give to theaters like Iraq and Afghanistan," Bradshaw said.

Even more opportunities exist now for civilians to serve. As the coalition works to help the Iraqi and Afghan governments to develop their defense ministries, more civilians are needed to serve as advisors to their counterparts, she said.

DoD civilians have a desire to serve, Bradshaw noted. State Department officials asked for help in filling slots in provincial reconstruction teams in Iraq. The solicitation for the 100 slots went throughout DoD, and more than 1,500 civilian employees sent in resumes. This demonstrated many DoD civilians would rise to the occasion to serve if they could, Bradshaw said.

"We filled those jobs, and we saw the increased demand for DoD civilians, yet we did not have an infrastructure to support that," she said.

To rectify that, Under Secretary of Defense for Personnel and Readiness David S.C. Chu issued a memorandum Feb. 12 titled, "Building Increased Civilian Deployment Capacity." That memorandum laid the groundwork for the expeditionary civilian workforce and put rules in place.

"The first is, if we advertised a position and a civilian volunteered, then that DoD civilian should be released to serve," Bradshaw said.

This will be tested as individual augmentee positions, normally filled by servicemembers in Iraq and Afghanistan, begin to be filled by civilians. A total of 157 positions are open.

"Our goal is to get DoD civilians to volunteer for these opportunities," she said. "At the end of the day, it's not only good for accomplishing the mission, but [*also*] for building an individual's portfolio for the future, [*when*] this kind of experience will become ever more important."

The idea is to have a cadre of civilians who can respond to long-term opportunities and to crises such as hurricanes, tsunamis, earthquakes, and so on, she explained.

"We're creating an infrastructure that can respond to needs around the globe, and that includes civilian capability," Bradshaw said.

The jobs are temporary assignments with most for a year, but some for six months. Civilians deploying to the region will receive not only cultural and language training, but also force protection training, and must meet medical requirements, she said. When the assignment is over, local installations must ensure civilian employees return to the jobs they left or similar ones.

"One of the objectives when we set up our expeditionary workforce is we need to have a ready, cleared, and trained workforce that can respond on a dime like our military does," she said.

Garamone writes for American Forces Press Service.

AMERICAN FORCES PRESS SERVICE (OCT. 2, 2008)
Presidential Fellows Program Develops Future DoD Leaders
Gerry J. Gilmore

WASHINGTON—Motivated individuals who want a fast track to executive careers within the Defense Department or at other federal agencies might investigate the Presidential Management Fellows Program.

The program's purpose "is to attract to the federal service outstanding men and women from a variety of academic disciplines and career paths who have a clear interest in, and commitment to, excellence in the leadership and management of public policies and programs," President Bush said in a statement on the Office of Personnel Management's Web site explaining the program.

The program was created by Executive Order in 1977, when it was known as the Presidential Management Internship program. The program's name was changed a few years ago.

The Defense Department is among several federal agencies that participate in the PMF program, said Washington Headquarters Services Manager Ken Rauch, PMF coordinator. Successful applicants, he said, serve on paid, two-year assignments.

WHS received 148 applicants for the seven fellowship positions that were available this year, Rauch said. WHS maintains 14 total positions as part of the program. The fellows receive training and other administrative program support.
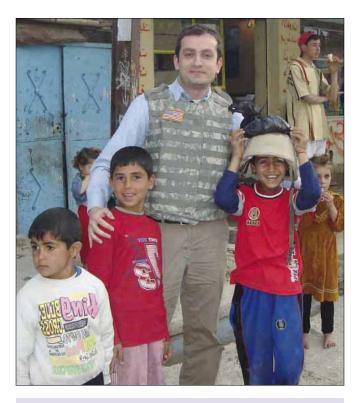
After completing the program, most participants join the federal civil service in functional areas that reflect their expertise, Rauch said, and most stay in the Office of the Secretary of Defense. "The fellowship journeys here at OSD are simply extraordinary, to include direct support to the global war on terrorism," he said.

Some DoD participants, like Ylber Bajraktari and Natalie Howley, volunteer for overseas duty in Iraq or Afghanistan as part of their two years of service.

Bajraktari, 30, obtained his graduate degree at Princeton University's Woodrow Wilson School of Public and International Affairs. A member of the PMF program's class of 2006, he served in Baghdad from February 2007 to February 2008 on the staff of then-Multinational Force Iraq commander Army Gen. David H. Petraeus.

"I cannot say enough good things about the program," said the Kosovo-born Bajraktari, who became a U.S. citizen in 2004. The program, he said, offers challenging assignments, as well as plentiful training opportunities.

Bajraktari was a member of a 20-person joint strategic assessment team during his duty tour in Baghdad. The team, he said, studied how military, economic, political, and diplomatic assets could be best employed to effect stability in and around Baghdad during the surge.

Ylber Bajraktari visits Iraqi children in the city of Tal Afar in northern Iraq. Bajraktari, a participant in the Presidential Management Fellows Program, served a year with Army Gen. David H. Petraeus' staff in Baghdad.   Courtesy photo

Surge-fortified U.S. and Iraqi security operations helped to reduce insurgent-committed violence in Baghdad and were a key component that contributed to the surge's success, Bajraktari said. Iraq today "is in a better place" than it was prior to the surge, Bajraktari said. However, he added, the situation in Iraq is still fragile.

Bajraktari earned the Defense Superior Civilian Service Award for his service in Iraq. He plans to join the Middle East section of the Office of the Secretary of Defense's policy shop to put his training and experience to good use.
"I wanted to do public service, and I wanted to work for the government," Bajraktari said in explaining why he applied for the PMF program. And international affairs "never gets boring," he said.

Howley, 27, began the Pentagon's PMF program a year after Bajraktari. Like Bajrakatari, she also obtained her graduate degree at the Woodrow Wilson School of Public and International Affairs. Now about halfway through the program,

Howley said she's still deciding where she'd like to work in the Defense Department.

Howley also performed overseas service, having served with the U.S. Embassy in Kabul, Afghanistan, from February to May of this year. She received the Global War on Terrorism Medal for her service there. While in Kabul, she worked with Afghan federal officials on Afghan local governance, elections and other issues.

"You do try to connect with the people and make their lives better," Howley, a Frankfort, Ky., native, said of her tour in Afghanistan. Her work in Kabul, she said, was conducted in a balanced way, with the view that Afghanistan is a sovereign nation with its own policies and priorities. "I really enjoyed it, and would go back," Howley said of her assignment in Afghanistan.

Although nominations for the 2009 PMF are now closed, those interested in applying for future PMF assignments can find registration information at <https://www.pmf.opm.gov/howtoapply.aspx>.

Gilmore writes for American Forces Press Service.

AMC Fellows Program
The Army Materiel Command is accepting applications for the AMC Fellows Program, Fellows Class 10, which begins in July 2009. The first set of interviews will occur in January or February 2009. Once participants have completed their graduate degree, they begin a series of rotational, on-the-job training assignments over the next 47 months. In the five-year training period, fellows can expect to advance from GS-7 to GS-13. Further details about the AMC Fellows Program are available in the *Fellows Brochure* at <www.amc.army.mil/pa/fellowsbrochure.pdf>.

AMERICAN FORCES PRESS SERVICE (OCT. 7, 2008)
AbilityOne Program Provides Jobs for Disabled Veterans
Gerry J. Gilmore
WASHINGTON—The Defense Department is a strong supporter of the federally managed AbilityOne program, which works with private and public groups to provide goods and services to the government and jobs for the blind and other people who have severe disabilities, including wounded veterans.

"As the largest customer of this program, the Department of Defense has a responsibility and a tremendous opportunity to increase support by procuring more goods and services provided by the AbilityOne program," John J. Young Jr.,

under secretary of defense for acquisition, technology and logistics, stated in a March 24 memorandum.

AbilityOne, formerly known as the Javits-Wagner-O'Day Act, or JWOD, is administered by the Committee for Purchase From People Who Are Blind or Severely Disabled—an independent federal agency. More than 1,300 wounded military veterans are part of the program's 43,000-strong workforce, according to a DoD news release. The Defense Department is the program's largest customer, the release said, as it purchases more than $1.3 billion in goods and services each year, including laundry services, uniforms, office supplies, and grounds maintenance.

Work contracts arranged through the AbilityOne program provide most of the chemical-protection coats and pants used by U.S. servicemembers. Skilcraft-brand office supplies found across the federal government also are part of the AbilityOne program.

President Bush, in a White House document dated Feb. 11, stated that the AbilityOne program "has taken steps to embrace successful business practices, including e-commerce and performance-based contracting." The program, he said, provides work for tens of thousands of disabled Americans employed at more than 600 community-based nonprofit organizations.

The AbilityOne program can trace its roots to the passage of the Wagner-O'Day Act of 1938, sponsored by Sen. Robert F. Wagner and U.S. Rep. Caroline O'Day. This legislation mandated that the federal government purchase brooms, mops, and other items provided by nonprofit agencies employing people who are blind. The Wagner-O'Day Act was expanded in 1971 through the efforts of Sen. Jacob Javits. The resultant legislation, known as the Javits-Wagner-O'Day Act, permits nonprofit agencies serving people with other severe disabilities in addition to blindness to participate in the JWOD program and authorized nonprofit agencies to provide not only supplies, but also services to the federal government.

The executive-branch Committee for Purchase From People Who Are Blind or Severely Disabled, the National Industries for the Blind, and NISH, formerly known as National Industries for the Severely Handicapped, form a triad of support for JWOD, whose name was changed to AbilityOne by the U.S. Congress in 2006.

Gilmore writes for American Forces Press Service.

AIR FORCE MATERIEL COMMAND NEWS RELEASE (OCT. 28, 2008)

Air Force Materiel Command's Top Civilian Outlines Goals

John Scaggs

WRIGHT-PATTERSON AIR FORCE BASE, Ohio—After one month on the job, Air Force Materiel Command's top civilian is working with the Pentagon and other agencies on establishing a clear civilian development model.

It is one of several priorities for Dr. Steve Butler, a member of the Senior Executive Service and the executive director for AFMC, which is headquartered at Wright-Patterson AFB. Creating the model is tied to the makeup of AFMC. Civilians comprise more than 70 percent of the command's work force of 77,000—the highest percentage among all Air Force major commands—and AFMC employs 40 percent of the total number of Air Force civilians.

Consequently, Butler said that AFMC will lead the way in establishing civilian leadership roles and developing its people.

"Much of this will occur within the next year," Butler said. "I hope to create a command-wide process to encourage and enhance opportunities for civilians to gain broader experience at their home centers and make it easier for civilians to move to other geographic locations. We will continue to aggressively push for additional acquisition resources and training for our people."

As the civilian deputy to Gen. Bruce Carlson, AFMC commander, Butler occupies a position equivalent to a lieutenant general. His role involves providing counsel on a variety of topics and dealing with union issues.

"For example, I advise General Carlson on acquisition issues relating to our mission to buy major weapon systems like the F-22 for the Air Force," Butler explained. "As an engineer, I advise him on science and engineering issues, to include how to recruit new scientists and engineers so the Air Force stays on the technical leading edge.

"Additionally, I lead the development of our civilian workforce and partner with the unions that represent our workers," he said. "I plan to meet with union leaders and continue the great work by my predecessor to value the contributions of our unions and to partner with them for success."

Butler said that AFMC's leaders recognize the demands on civilian leadership and the need for more deliberate development of the civilian workforce.

Scaggs writes for Air Force Materiel Command Public Affairs.

OSD RELEASES SYSTEMS ENGINEERING GUIDE FOR SYSTEMS OF SYSTEMS (SEPTEMBER 2008)

The *Systems Engineering Guide for Systems of Systems,* published by the offices of the director, systems and software engineering, the deputy under secretary of defense for acquisition and technology, and the under secretary of defense for acquisition, technology and logistics, addresses SE considerations to meet capability needs through integrating independently useful systems into a larger system that delivers unique capabilities—a system of systems—within the Department of Defense.

Drawing from the lessons of current SoS SE practitioners, the guide is intended to provide a resource for systems engineers who are supporting SoS work, particularly as part of an SE team for an SoS.

Following development of the initial draft in 2006, a pilot phase was conducted to solicit input from practitioners across DoD on the approaches employed by their teams to conduct SE in their SoS environments. Data from these reviews, along with information from case studies conducted as part of the initial draft of the guide, provide the basis for this document.

In addition, research teams active in areas related to SoS SE provided input to this version of the guide. These teams provided feedback on the draft guide and input based on the results of their research as it applies to the guide's contents.

Finally, several panels were held with the International Council on Systems Engineering, and a workshop was held with industry representatives under the auspices of the National Defense Industrial Association SE Division. Other industry representatives, including Aerospace Industries Association, participated in the guide review process.

The results and experiences of SE practitioners were emphasized in this version of the guide since they most closely represent the perspective, circumstances, and concerns of the guide's primary target audience. The views of the research community and industry have been critically important in understanding the limits of this version with respect to the broader areas of SoS SE and in assessing the alignment of views between SoS SE practitioners and researchers.

Download the guide at <www.acq.osd.mil/sse/docs/se-guide-for-sos.pdf>.

Improving Defense Information System Acquisitions: Information Systems Summit

The Information Systems Summit will be held Jan. 22-23, 2009, at the Hyatt Regency Miami, in Miami, Fla. The theme of the 2009 event will be "Improving Defense Information System (IS) Acquisitions: Testing IS Capability in a Network Environment." For summit registration, go to <http://eweb.ndia.org/eweb/dynamicpage.aspx?site=ndia&webcode=eventlist>. For more information, contact Kelly Seymour, kseymour@ndia.org or 703- 247-2583.

NDIA Biometrics Conference 2009

The National Defense Industrial Association will sponsor the 2009 NDIA Biometrics Conference Jan. 27-28, 2009, at the Sheraton National Hotel in Arlington, Va. Register for the conference at <http://eweb.ndia.org/eweb/dynamicpage.aspx?site=ndia&webcode=eventlist>. For more information, contact Holley Slabaugh, meeting planner, hslabaugh@ndia.org or 703-247-2561.

2009 Tactical Wheeled Vehicles Conference

The 2009 Tactical Wheeled Vehicles (TWV) Conference will be held Feb. 2-4, 2009, at the Monterey Conference Center in Monterey, Calif. The theme of this year's event is "TWV: Rebuilding the Fleet: Reset, Repair, Re-buy." Register for the conference at <http://eweb.ndia.org/eweb/dynamicpage.aspx?site=ndia&webcode=eventlist>. For more information about the conference, contact the conference chairperson, Carol Orr, carol.orr@amgeneral.com or 703-875-3365.

2009 Munitions Executive Summit

The 2009 Munitions Executive Summit will be held Feb. 3-5, 2009, at the Ritz-Carlton New Orleans, in New Orleans, La. Register for the summit at <http://eweb.ndia.org/eweb/dynamicpage.aspx?site=ndia&webcode=eventlist>. For more information, contact Jennifer Hoechst, meeting planner, jhoechst@ndia.org or 703-247-2568.

Mastering Business Development Workshop

The Mastering Business Development (MBD) Workshop will be held Feb. 3-4, 2009, at the Westin Hotel in Huntsville, Ala. The MBD Workshop is a transforming experience that combines an intensive, interactive team-learning approach with the fundamentals of the core competencies required for sustained revenue generation. The curriculum enables participants to personally discover how intellectual, emotional, and behavioral change can have a significant impact on their personal and professional lives. Participants learn how to leverage the principles of behavioral psychology to identify real opportunities, qualify prospects, develop relationships, and create win-win situations for their companies, their cli-

ents, and themselves. Register for the workshop at <http://eweb.ndia.org/eweb/dynamicpage.aspx?site=ndia&webcode=eventlist>. For more information, contact Michelle Hariston, mhariston@ndia.org or 703-247-9478.

20th Annual SO/LIC Symposium & Exhibition

The 20th Annual SO/LIC (Special Operations/Low Intensity Conflict) Symposium & Exhibition will be held Feb. 10-12, 2009, at the Marriott Wardman Park in Washington, D.C. The theme of this year's event, "The Persistent Conflict: The Path Ahead," will highlight the myriad challenges faced in a persistent conflict that includes future force structures, irregular warfare, regional engagement, coalition operations, global force posture, interagency coordination, weapon systems, and training requirements. Register for the symposium and exhibition at <http://eweb.ndia.org/eweb/dynamicpage.aspx?site=ndia&webcode=eventlist>. For more information, contact Meredith Geary, associate director, mgeary@ndia.org or 703-247-9476.

1ST Annual Women in Defense Symposium

The 1st Annual Women in Defense Symposium will be held Feb. 18, 2009, at the Loews Hotel in Coronado, Calif. The theme of this inaugural event is "Leadership in a Changing World." This event will provide participants:
- Networking and professional development opportunities for women in national defense and security, and to support military servicemembers.
- Qualification for four Defense Acquisition University Continuous Learning Points (CLP) in accordance with the continuous learning policy set forth for the Department of Defense acquisition, technology and logistics workforce.
- Access to dynamic speakers—flag officers, senior executive service members, as well as executives from government, industry, academia.
- A variety of booths, including educational opportunities.

Registration will be posted soon at <http://www.widsandiego.org>. For more information or to get involved, contact Tricia Ward, vice president, San Diego Chapter WID, ward_patricia@bah.com or 619-981-1485.

25TH Annual Test & Evaluation National Conference

The 25th Annual Test & Evaluation National Conference will be held March 2-5, 2009, at the Sheraton Atlantic City Convention Center Hotel in Atlantic City, N.J. This national conference is invaluable to those tasked with directing and executing system development programs for the Department of Defense, Department of Homeland Security, Department of Energy, and other government departments tasked with various elements of our nation's security. Test planners,

modeling and simulation users and developers, range operators, program managers, military personnel charged with system acquisition responsibilities, industrial professionals, and others under contract with the government to provide support to our nation's defenses will also benefit. Please go to the NDIA Web site at <www.ndia.org/> to register for the conference. For more information, contact Emily Agnew, meeting planner, eagnew@ndia.org or 703-247-2566.

Warfighter's Vision 2009 Conference

Warfighter's Vision 2009, a forum sponsored by the Association for Enterprise Integration, will be held March 5-6, 2009, at the Ronald Reagan building in Washington, D.C. The theme of the 2009 event will be "Global Information Grid 2.0 and Cyber: Creating the Secure, Single Information Environment." The purpose of the Warfighter's Vision 2009 Conference is to give voice to the warfighter on information and communications capabilities necessary to assure mission performance in both joint and coalition environments. The conference provides:

• A forum for discussing topics of concern to Combatant Commands with industry and DoD officials.
• Input to DoD policy makers regarding needs and priorities.

Register for the conference at <www.afei.org/brochure/9a04/index.cfm>. For more information, contact Betsy Lauer, 703 247-9473.

2009 Joint Undersea Warfare Technology Spring Conference

The 2009 Joint Undersea Warfare Technology Spring Conference will be held March 9-12, 2009, at the Admiral Kidd Catering and Conference Center in San Diego, Calif. Please go to the NDIA Web site at <www.ndia.org/> to register for the conference. For more information, contact Kimberly Williams, meeting planner, kwilliams@ndia.org or 703-247-2578.

Precision Strike Annual Review

The Precision Strike Annual Review will be held March 10-11, 2009, at the Emerald Coast Conference Center in Fort Walton Beach, Fla. This annual review will present and clarify national defense policy and strategies to achieve the goals of precision engagement, afford the precision strike community the latest thoughts from Defense Committee Members of Congress, and highlight major precision strike achievements through presentation of the William J. Perry Award. Participants will also focus on the review and way forward of important precision strike weapons systems and capabilities essential to meet the joint warfighters' needs—particularly those weapons systems in development and procurement.

Register for the 2009 event at <www.precisionstrike.org/events.htm>.

AIR FORCE PRINT NEWS (SEPT. 16, 2008)

Acquisition Official Outlines Challenges Facing ISR Community

Chuck Paone

HANSCOM AIR FORCE BASE, Mass.—Command, control, computers, communications, intelligence, surveillance and reconnaissance, collectively referred to as C4ISR, is a very large business, Martha "Marty" Evans told a government-industry crowd that assembled at Hanscom Sept. 11.

"When you look at the portfolio for C4ISR, it's only slightly smaller than the entire budget for the nation of Georgia, and it's a lot bigger than the entire [gross domestic product] of a lot of other small countries in the world," said Evans, who is the director for information dominance programs within the office of the assistant secretary of the Air Force for acquisition.

Martha "Marty" Evans, director for information dominance programs within the office of the assistant secretary of the Air Force for acquisition, speaks to a government-industry gathering at Hanscom Air Force Base, Mass., Sept. 11. Evans told the group that the Air Force is spending lots of money on C4ISR and is looking for big results. U.S. Air Force photo by Rick Berry

Her main point was that defense leaders aren't just talking about C4ISR, but are also putting a lot of money into it.

"We have the responsibility to spend that money wisely," she said, addressing a luncheon crowd at a forum sponsored by the Lexington-Concord Chapter of the Armed Forces Communications and Electronics Association.

Speaking of the ISR surge called for by Defense Secretary Robert Gates, Evans said that the Air Force currently has 60 percent of its unmanned aerial vehicles deployed to the area of responsibility. She also noted that while other Services have UAVs, only the Air Force turns its [UAVs] over to the joint force commander, since the Navy's assets are ship-bound and the Army operates its UAVs within its own battalions.

Regardless of how systems are operated, though, all U.S forces have to work jointly, Evans said.

There's an insatiable demand in theater for full-motion video imagery produced by the Air Force's high-flying, loitering craft. But there is also great demand for other forms of ISR, she said, noting that the Air Force is buying 37 RC-12s.

"They want them quickly; they want them now, so we're going to have the first seven of them out there within four months."

Using these small aircraft to do ISR is a whole new mission for the Air Force, she said, adding that "It won't stop there."

"You know as well as I do that there will be a need for more and better sensors."

The Electronic Systems Center is uniquely positioned to help fill these and other needs, according to Evans, who spent more than 20 years of her own career managing ESC programs. She cited increased standardization between, and integration among, manned and unmanned platforms to enhance utility and efficiency as prime examples. Enhancements that better enable ISR assets to provide precise location and target identification data to shooters will also be very helpful.

"How do we do that? How are we going to continue to update that?" she asked. "Those are the things we're going to have to be looking at."

Evans also discussed the ongoing challenge of turning all available data into useful information, or what is often called actionable intelligence. Everyone involved in these efforts needs to keep thinking about ways to enable better, faster, and easier processing of data.

"And it's not just the processing; it's the dissemination," she said. "We've got to get the data out to the people who need to make decisions, and that's all about how you develop the architectures, all about how you put the command and control together."

She noted on several occasions that, while so much discussion is focused on UAVs, existing platforms such as Joint Surveillance Target Attack Radar System and Airborne Warning and Control System "are in the fight right now." These systems, she said, will also be a big part of the future, and will continue to be upgraded to play increasingly important roles.

"Everyone has to remember that, when we're talking about ISR, it's not one piece that matters," Evans said. "It's all the pieces. It's making them all work together."

Paone writes for 66th Air Base Wing Public Affairs.

AMERICAN FORCES PRESS SERVICE (OCT. 3, 2008)
Mullen Stresses Leadership, Accountability in Business School Speech
Jim Garamone

PHILADELPHIA—A year and a day after taking office as the nation's 17th Chairman of the Joint Chiefs of Staff, Navy Adm. Mike Mullen spoke about leadership to the students of the Wharton Business School Oct. 2.

Mullen spoke about what his 40 years in the U.S. military have taught him about leadership, telling the students he never intended to make the Navy a career, but got around great people who helped to open his eyes.

The chairman stressed accountability to the packed auditorium. The admiral said he was seven weeks into a 10-week course on leadership at Harvard University in 1991 before anyone even mentioned accountability.

"I didn't understand that," he said, "because leadership ... is about understanding accountability—being held accountable and at the same time holding yourself accountable."

Mullen told the students that his arrival at the U.S. Naval Academy in 1964 was an eye-opener.

"I was 17 years old and had been out of [California] once in my life," Mullen said. Meeting and working with midship-

men from around the country was a learning experience, he said.

Being in the military offered him the opportunity to see the world, the admiral said, but most importantly, it offered the opportunity to lead.

"It gave me an awful lot of responsibility when I was very young," Mullen said. "And the Navy kept feeding me these positions my entire life."

In the military, Mullen told the students, command is the lodestone for leaders. "It's the pinnacle," he said, adding that accountability is fundamental to the joy and challenge of command because commanders find themselves having to put together teams to accomplish the missions they are assigned.

Command is built around trust—both up and down—and hinges on choosing the right people, Mullen said. The hardest job he has had in his 40 years in the military has been selecting personnel for the various missions, he told the audience.

Few people succeed by just "winging it," the chairman said. He urged the young men and women to have a strategic plan and follow it. Leaders without a strategy or a plan are the ones who fail, he said.

Mullen urged the students not to fear failure. "I learned more from when I failed than when I succeeded," he said, "but I wouldn't recommend failing as much as you can so you can learn."

If failure occurs, people should get up, dust off, and get moving again, Mullen said. "Then it becomes, 'Do you have the depth, do you have the reputation, do you have the mentorship to succeed?'" he said.

Mullen told of two of his own failures, one as a young officer and one when he was a bit more senior. He expressed his gratitude for mentors who didn't give up on him then, and gave him the chance to continue, rather than firing him. "I learned a great deal from that experience alone," he said.

Leaders have to change and grow, the chairman said. "If you're not growing, you're dead," he said. "The questions become, 'How do you stimulate growth, and how do you reach for the right kind of growth?'"

The chairman—the highest-ranking officer in the U.S. military—said he continues to grow. He continues to learn about

the other Services, he said—especially the Army, which he calls the center of gravity for the U.S. military. He tries to learn best practices from private businesses and from subject-matter experts in such critical areas as cyber-defense, he told the audience.

The speed of today's world complicates leadership, Mullen said, as new technologies exchange information at the speed of light. "How do we keep up to the speed of light?" he asked. "We better be able to, especially because being No. 2 in the business I'm in is not a great outcome."

Leaders will succeed only if they are willing to work hard, and are willing to adapt, the chairman said.

Information is crucial to military and business success, Mullen said, but he noted that the more senior a leader becomes, the more removed he or she is from what's really going on.

A leader "has to have people that will tell you the truth," he said.

Finally, Mullen said, empathy is important for leaders. He said he finds it helpful to look at problems in areas such as Pakistan, Afghanistan, and Iraq through the eyes of the people who live there. He visits the areas, speaks to the leaders, and listens to them. "My growth in this job is tied to that," he said.

Integrity and duty are not just words, the chairman said, and accountability is not an abstract concept.

"You will have to walk the walk," he said. "You are what we will become in the future."

Garamone writes for American Forces Press Service.

AIR FORCE NEWS SERVICE (OCT. 7, 2008)
Air Force Senior Leaders Take Up Key Decisions
WASHINGTON—The nuclear enterprise, cyber organization, end strength, force shaping, and command and control of Air Force operations were just some of the topics discussed when Air Force senior leaders met at CORONA on Oct. 1-3 at the U.S. Air Force Academy, Colo.

Secretary of the Air Force Michael B. Donley set the tone stating, "Over the past two days we addressed several issues, making decisions on key Air Force missions necessary to move our Air Force in the right direction."

Air Force Chief of Staff Gen. Norton Schwartz followed with comments on the importance of the conference saying,

"CORONA is a forum for decision. The teamwork manifested in this room will allow us to accomplish what our Air Force needs done."

As a follow-up to the recent nuclear summit, the briefings and decisions at CORONA were dominated by discussions on the nuclear enterprise. Discussions included options to reconfigure the command structure for nuclear forces, roles and responsibilities of the Nuclear Weapons Center, the required skills and force development for personnel conducting the nuclear mission, and stand-up of the new nuclear-focused staff element organization within Air Force headquarters.

The leadership also decided to establish a nuclear-focused major command to concentrate Air Force support for the nuclear and deterrence missions.

"We will announce decisions soon because they are crucial steps toward attaining excellence in our nuclear enterprise and revitalization of the nuclear culture across the Air Force," said Donley.

Initial planning will be integrated into the Air Force Nuclear Roadmap, which will be unveiled in a few weeks.

In addition, the senior leaders discussed the Air Force active duty end strength ceiling, now to be 330,000 personnel, and addressed which missions and functional specialties should obtain additional allocations based on emerging missions as well as critically manned career fields.

"Force shaping across the Air Force is hard work. There are many factors that need to be considered as we determine where manpower billets will be placed … everything from new missions that are directly contributing every day to joint operations to shortfalls in specific functional areas," said Schwartz. "The leadership will work to close this issue for this budget cycle in the coming weeks."

A key component of the Air Force's contribution to the current war on terrorism is the execution of command and control of air assets supporting theater operations. Leaders initiated discussions on how the Service can better fulfill the responsibilities to organize, train, and equip command and control capabilities for the joint force commander, as well as how the Air Force can best identify and overcome potential shortfalls in our capabilities.

"How we prioritize and utilize our command and control capabilities in support of joint force operations are key to the overall success of every mission," said Schwartz.

Also discussed was how the Air Force can improve support to joint force commanders. One decision made is to assign a senior Air Force officer to appropriate JFCs with command authority to direct air support. The leadership also decided to strengthen air-to-ground integration by increasing the number and training of the airmen supporting tactical air control systems and accepting offers from other Services to integrate their personnel into our command and control units.

Leadership also decided to establish a Numbered Air Force for cyber operations within Air Force Space Command and discussed how the Air Force will continue to develop capabilities in this new domain and train personnel to execute this new mission.

"The conduct of cyber operations is a complex issue, as DoD and other interagency partners have substantial equity in the cyber arena," said Donley. "We will continue to do our part to increase Air Force cyber capabilities and institutionalize our cyber mission."

Locations for the new nuclear command and cyber NAF were not addressed and require further deliberation. Other key AF issues discussed include an update on the status of joint basing initiatives, the development of a common Logistics Standardization Evaluation Program, and review of the concept of integrating the networks used to repair the Air Force's weapon systems.

"We came together to discuss key issues, chart a way ahead, and move forward with sound decisions," said Schwartz. "Our goal is a more stable Air Force, focused on our core missions, as a key member of the joint team."

"What airmen do every day across the Air Force is not easy work. What our leadership team did over the last couple days at CORONA was not easy work," said Donley. "But we all know how to rise to the challenge, and the Air Force is better because of everyone's efforts at making key decisions."

AIR FORCE MATERIEL COMMAND NEWS RELEASE (OCT. 9, 2008)
AFMC Commander Looks to Future
Air Force Staff Sgt. LuCelia Ball
EGLIN AIR FORCE BASE, Fla.—The top officer in Air Force Materiel Command visited Eglin AFB Oct. 8 to speak at the 34th National Defense Industrial Association Symposium.

While visiting, Gen. Bruce Carlson took time to reflect on Team Eglin's contributions to the Global War on Terror.

"Team Eglin is a critical part of the Global War on Terror," he said. "Not just weapons or weapons that are part of normal programs, but weapons that have been very rapidly developed, rapidly fielded, and then modified very quickly. As you know, we've modified several of the Small Diameter Bombs so they've become highly effective, low collateral damage weapons."

Another critical part of the mission, he said, are the people that make up Team Eglin.

"It's not just the weapons, it's the people that we send to the area of responsibility who are critical," he said. "I recently spent some time in the AOR [area of responsibility]. While there, I visited six different bases and met with a number of Eglin people who are deployed.

"Team Eglin people run the hospital at Kirkuk Air Base, Iraq, for 179 days at a time," Carlson said. "These airmen are very busy people who provide critical care and stabilize patients

Gen. Bruce Carlson, commander of Air Force Materiel Command, visits the base operations flight at Eglin Air Force Base, Fla., before continuing on to brief attendees at the 34th National Defense Industrial Association Symposium.
U.S. Air Force photo by Tech. Sgt. Brian Jones

for transport. I also met with explosive ordnance disposal units, civil engineers, and transportation specialists. They work in a very high operations tempo environment and do some great things for the fight."

The general also commented on how Team Eglin will support future requirements as the Air Force continues to prepare for tomorrow through the development and delivery of advanced weapons systems.

"The great thing about Team Eglin is that, in a phrase, you have it all in one spot," he said. "Team Eglin not only has the laboratories here that provide the feeder technology for what we do in this business, but it also houses the AFRL [*Air Force Research Laboratory*] munitions directorate, the Air Armament Center, and its three wings—all of those entities work together synergistically to provide quick-reaction capability to the joint force.

"There are a lot of customers who come here and find that Eglin, its facilities, and the highly trained people here to be absolutely critical to what they are doing in the Army, Navy, Coast Guard, Defense Threat Reduction Agency, and the Department of Energy because of the unique capabilities here," Carlson added.

Ball writes for 96th Air Base Wing Public Affairs.

ARMY NEWS SERVICE (OCT. 9, 2008)
Myth Busted: Scientists Unveil High-Tech Army
Jacqueline M. Hames
WASHINGTON—Advancements in science and technology that support full-spectrum operations, like exoskeletons, were discussed at the annual meeting and exposition of the Association of the United States Army.

The forum "Busting the Low-Tech Myth: Army S&T Support to Full Spectrum Operations" provided presentations on how experimental and applied technologies show the Army has advanced across the board, from recruiting to technology in theater.

Lt. Gen. Ross Thompson, military deputy to the assistant secretary of the Army for acquisition, logistics and technology, opened the panel with a report on how to grow the AT&L workforce in order to aid research and development.

"We're going to be 'in-sourcing' more things than we've been outsourcing lately," Thompson said.

Other presenters went on to discuss the importance of recruiting future generations to research and operate tech-

nologies, and how technology itself plays an important part in the recruiting; how technology helps facilitate the ability to track business; the significance of internal research and external commercial partnerships; and the technological advancements themselves, both in the experimental and applied phases.

Nanoflyers and Exoskeletons

"Advancement in computers and our computational capabilities is enormous," said Dr. Thomas Killion, deputy assistant secretary of the Army for research and technology and its chief scientist. The LandWarrior system, the technology in the back of a Stryker vehicle, allows the Army to do things it would have never been capable of before, he explained.

Current technologies in the field include precision munitions, unmanned vehicles from Future Combat Systems, and hybrid electric power sources, Killion said. But these applied technologies are not the only things that make the Army high-tech; experimental systems and advanced research also make the Army more developed.

The Army has invested heavily in nanotechnology and biotechnology, Killion said. "Nanotechnology in terms of designing new materials from the ground up, atom by atom, to provide new properties" in terms of protection, sensing, and monitoring the condition of the soldier.

"Biotechnology, in terms of really mimicking biology to come up with new ideas for protection, sensing, communications, for doing things in ways that billions of years of evolution have helped living things to do things, and exploiting that knowledge to design man-made systems," he said.

The Army is developing training avatars—computer-generated simulations that will react to and interact with soldiers intelligently, as well as researching sensors that monitor brain functions, which could lead to enhanced prosthesis control, Killion said.

During his presentation, Killion ran two videos of technologies still being experimented with: exoskeletons and nanoflyers.

The exoskeleton is a robotic device the soldier wears like a full body suit. It would enhance soldier performance, increasing strength without losing agility, and potentially developing into an entirely covered system—a little like the protective suit worn in the recent film "Ironman."

Nanoflyers, Killion explained, weigh about as much as a penny and resemble tiny helicopters, able to fit into a back-

pack easily. They will serve as urban-interior surveillance technology, and can either hover inside buildings or be placed inconspicuously on a shelf for stationary monitoring.

Killion emphasized that in order to continue technological advancements, the Army must foster science and engineering career paths.

"Tomorrow's technology is in the minds of today's youth," he said.

Recruiting for the Future

Part of developing and maintaining a high-tech Army is having the manpower to research, develop, and operate the business and technologies—which means recruitment, Thompson said.

Thompson explained how the AT&L is expanding its workforce, both on the civilian side and the military side. Currently, there are roughly 38,500 civilians in the workforce and he projects doubling that amount through 2012. On the military side, there are less than 16,000 people, but that's expected to increase by 178 in the contract area, and 149 other military.

"All those acquisition career fields require highly trained people; it's not just the PhD scientists—it's the business school graduates that understand basic economics and finance and can help us put together a good contract instrument," he said.

Ed Walters, chief marketing officer for the Army, spoke about the new Army Experience Center, a recruiting center in Philadelphia that uses advanced technology and marketing theories.

Based on the concept of experiential marketing, the Army Experience Center provides a relaxed environment for recruiters to interact with young people and their parents, Walters said.

The center is futuristic in appearance, complete with a command center where visitors can be briefed virtually by actual soldiers. State-of-the-art gaming stations, touch screen monitors, and realistic battle simulators all help reinforce the idea that the Army is high-tech, and help to connect with the potential recruits who grew up in a technology-oriented environment, he explained.

"The mission is to apply alternative business practices to recruiting," Walters said, and to create innovative programs to enhance the understanding of the Army.

Researching the Future

The director of the Tank and Automotive Research, Development and Engineering Center, Dr. Grace Bochenek, said that the Army is researching several types of alternative energy: biodiesel, hydrogen fuel, and hydroelectric power sources. These would help run autonomous vehicles and provide clean, efficient power for the soldier of the future.

In fact, hybrid electric power has already been put to use as a power source for the FCS Non-Line of Sight Cannon.

The Army is also working with various representatives from the commercial automotive industry, like GM and Toyota, to research vehicle safety, Bochenek said.

Jeff Parsons of the Army Contracting Command spoke about how new software enables training and experience to be tracked, helping to build a "virtual contracting enterprise" and create better contracting officers.

"[Our job] is to recruit you to help us get the story out," Killion said, asking the audience to spread the word: "That the Army is a high-tech Service, that we provide soldiers with technology that enables them to more effectively do their jobs, and do it safely."

AIR FORCE NEWS SERVICE (OCT. 14, 2008)
Chief of Staff Emphasizes Logisticians' Role
John Scaggs

WRIGHT-PATTERSON AIR FORCE BASE, Ohio—You don't have to sell Air Force Chief of Staff Gen. Norton A. Schwartz on the value of logistics.

"Acquisition, engineering, and wholesale logistics form the foundation of numerous Air Force capabilities ... Logistics professionals who perform these services are critical to everything the Air Force does and to its success."

The chief of staff made those remarks Oct. 13 while speaking to about 1,200 attendees from logistics career fields during the first day of the Logistics Officer Association conference in Columbus, Ohio.

The Logistics Officer Association is an organization that strives to enhance the military logistics profession. The conference provides an open forum to promote quality logistical support and logistics officer professional development.

Schwartz praised logisticians for their efforts to keep Air Force weapon systems ready well beyond their intended, designed service life.

"Our systems continue to perform miraculously because of what logisticians do," Schwartz said.

He relayed two stories recently told to him by Army personnel. In one, an improvised explosive device stranded a group of 18 soldiers. One of the surviving soldiers said the enemy, numbering about 60, attacked the soldiers and killed five.

"He told me that when things looked bleak, there was a huge explosion not more than 100 meters from [the] U.S. soldiers' location," Schwartz said. "The Air Force delivered a close strike that neutralized the enemy.

"When I think about that story, I'm reminded how years of sustainment effort came together that day to save American lives and make that mission a success," the general added.

He also shared that an Army general with the 101st Airborne Division told Schwartz that the infantry's best friend is an Air Force pilot.

"How does this tie in to the logistics community?" Schwartz asked those in the audience. "Air Force pilots are there for ground troops because 'loggies' are always there.

"From 'loggies' who are on the ramp in hot zones, to those supporting efforts in theater, to 'loggies' delivering munitions, to those working acquisition and sustainment at our depots ... our aircraft would not have their capability, reliability, and precision without the logistics community," he said.

Schwartz challenged attendees to take advantage of the opportunities the LOA conference provides.

"There is no substitute for experience and leadership," the general said. "LOA is a critical component in educating Air Force logisticians. Network and build relationships while you're here.

"Remember that 'support' is not a dirty word," Schwartz said. "Deliver what you promise. Making others successful is significant and worthy."

Scaggs writes for Air Force Materiel Command Public Affairs.

DEPARTMENT OF DEFENSE NEWS RELEASE
(SEPT. 9, 2008)
DoD Selects Tribal Colleges and Universities for Grants
The Department of Defense announced today plans to award instrumentation grants totaling $2.4 million to 13 tribal colleges and universities. These grants will be made under the fiscal 2008 DoD Historically Black Colleges and Universities and Minority Institutions Infrastructure Support program. The grants will enhance programs and capabilities at these minority institutions in scientific disciplines critical to national security and the DoD.

This announcement is the result of merit competition for infrastructure support funding conducted for the Office of Defense Research and Engineering by the Army Research Office. The solicitation resulted in 15 proposals in response to a broad agency announcement issued in May 2008. The Army Research Office plans to award 13 equipment grants ranging from $97,000 to $244,000. Each award will have a 12-month performance period.

Awards will be made only after written agreements are reached between the department and the institutions. The list of recipients is available at <www.defenselink.mil/news/d20080909grants.pdf>.

ARMY NEWS SERVICE (SEPT. 11, 2008)
Picatinny Engineer Awarded Two Patents for New Grenade Ammunition Designs
Audra Calloway
PICATINNY ARSENAL, N.J.—On Aug. 5, the U.S. Patent and Trademark Office issued an Armament Research, Development and Engineering Center employee two patent approvals for new designs to be incorporated into the ammunition belt for the MK 19 grenade machine gun. The MK 19 40mm grenade machine gun is used by all military services to deliver intense firepower against enemy personnel and lightly armored vehicles.

The designs to be incorporated into the belt, which is called a 40mm M16A2 link, are meant to keep gunners safer on the battlefield, help conserve ammunition, and save money.

ARDEC engineer Eric Goon designed the new concepts, the first of which is a coupling, or pivoting, used to connect grenade ammunition cartridge loops.

The new coupling design provides a potential life-saving feature. It allows MK 19 gunners to attach ammunition belts without having to reload the weapon when under hostile gunfire, Goon said.

In the current attachment system, grenade ammunition comes in a continuous link of 32 grenades, Goon said. The grenades cannot be detached, or reattached to other ammunition belts, unless they are cut or pried open.

Therefore, if an MK 19 gunner needs more ammunition, the feed cover must be opened to reload. With the new attachment, an assistant gunner could fasten another belt to the partial belt so that the weapon does not require reloading.

Goon said this saves time and potentially a warfighter's life.

The reattachment feature also allows military members to recover partially used clips and attach them to other ammunition belts for future use, he said. This new reattachment feature provides a way of salvaging costly field ammunition that would be rendered useless or costly to recover with the current design.

Goon estimates the coupling will save the Army more than $2 million dollars per year in unused grenade rounds, which cost approximately $40 per round.

The second patent invention is for a new method of making 40mm one-piece loops for the grenade ammunition cartridge.

The metal loop, which surrounds the individual grenade, is what the coupling will attach to in order to link the grenades together.

Currently the loop comes in two parts and is bonded together using resistance-welding, Goon said. This welding, although effective, is seen as an undesirable operation because the welded sections could potentially rust over time, weakening the bond and threatening the integrity of the link.

The approach taken for the invention is to eliminate the welds in their entirety, creating a solid one-piece loop, he said.

This new single-piece loop design offers a more durable product, a 15 percent weight reduction of the component, and a potential cost reduction of approximately 30 percent, said Goon.

For the Soldier
Goon said he decided to improve the grenade ammunition link after a request from troops in the field who said they needed a reliable way to reuse ammunition through re-linking the belts.

He heard about the issue through an ARDEC engineer team deployed in battle zones to survey warfighters and gain feedback about complaints or technological deficiencies.

"When I heard about that I said, 'Wait, we need to answer the call for the soldier, our customer,'" Goon said. "I said 'let's do something about it.'"

Goon said he spent approximately six months designing the inventions.

While the patent for the new designs was pending, Goon said he worked with a contractor to ensure the designs were producible.

Once incorporated, Goon said the new invention designs will not be noticeable to the military members who use the product, except for the enhanced pivoting features. There will be no modification in the way the user handles the weapon system.

"I didn't want to change the whole system, because it would be too costly," Goon said. Instead, he "enhanced" the current system to make it more efficient.

Troops could see the coupling device as early as fiscal year 2009 and the one-piece loop as early as fiscal year 2010.

Calloway writes for Picatinny Public Affairs.

AF-Funded Engineer Earns Honors for Scientific Achievements
Molly Lachance
ARLINGTON, Va.—After decades of research at the University of Michigan in areas ranging from materials to circuits, 2008 has been an especially noteworthy year for Dr. Pallab Bhattacharya, who earned numerous accolades from the engineering community.

This year, three organizations recognized Bhattacharya for his significant achievements. The National Academy of Engineering elected him as a member; the Institute of Electrical and Electronics Engineers Nanotechnology Council co-awarded him the first ever Pioneer Award in nanotechnology; and The Minerals, Metals, and Materials Society chose him as the 2008 John Bardeen award recipient.

These awards and recognition resulted from Bhattacharya's impact on optoelectronics and nanophotonics. His work with

quantum dots has improved laser, optical communication, and long-wavelength detector technologies.

Quantum dots are very small, self-organized islands of semiconductors that behave like artificial atoms, explains Bhattacharya. One big difference, however, is how they behave when injected with electrons and holes, collectively referred to as charge carriers.

After dedicating considerable effort to understanding the dynamics of these injected charge carriers, Bhattacharya was ultimately able to use quantum dots to create a new type of laser that combined the best qualities from semiconductor lasers and atomic lasers.

"A decade ago, we were the only group in the world looking at the initial deficiencies of high-speed quantum dot lasers," Bhattacharya said. "We solved the problems and now they are awesome devices."

As he and his team learned more about the pros and cons of using quantum dots in laser technology, they found that some of the deficiencies in laser applications are advantages for long-wavelength detectors. One such advantage is the ability to use the detectors at much higher temperatures.

A current project funded by the Air Force Office of Scientific Research has extended this research to terahertz-frequency wavelength detectors. The Air Force plans to use these devices, which measure very long wavelengths, for multi-spectral detection in airborne and terrestrial settings.

In another AFOSR-funded project, Bhattacharya is exploring the possibility of growing quantum dot lasers directly on silicon, allowing scientists to use light instead of charge to route information on chips. This would eliminate the need for metal interconnects, which generally have problems with heating, electromigration, and propagation delays.

Over the next several years, Bhattacharya will continue his research, focusing primarily on silicon light sources and nanolasers with total dimensions no larger than their wavelengths.

Lachance is with the Air Force Office of Scientific Research.

Scientist Receives Air Force Award
Pete Meltzer Jr.
WRIGHT-PATTERSON AIR FORCE BASE, Ohio—An award-winning scientist and a principal electronics research engi-

neer at the Air Force Research Laboratory has been named a 2008 Fellow of AFRL for outstanding contributions to the Air Force and the Department of Defense.

Dr. James Grote has worked at AFRL for 30 years and is an acknowledged leader in several areas of research and development, including laser gyros, nonlinear electro-optic sensor materials and devices, optical interconnects and optical lithography, and DNA-based materials and devices. He has worked on subsurface fractures on mirror substrates, improving position and weapons accuracy, and reducing inertial navigation system drift for ring laser gyros.

Grote developed optical interconnects for communications networks, which are now part of parallel high-speed transceivers for military information systems. He invented the technology for conductive polymer claddings for non-linear optic polymer electro-optic modulators, resulting in a tenfold improvement and a record 30 percent enhancement in the electro-optic coefficient. Grote initiated AFRL's DNA-photonics research, which has demonstrated unique, state-of-the-art improvements in materials properties and device performance using this new bio-organic-based technology.

Grote's contributions to the Air Force and the Department of Defense are complemented by his stature in the peer research community, evidenced by more than 100 publications, seven patents, and 15 edited books.

He has earned several prestigious awards including the Fritz J. Russ Bio-Engineering Award; the AFRL International Award; the Charles J. Cleary Award for Scientific Achievement; an Air Force Basic Research Award Honorable Mention; Senior Member status in the Institute of Electrical and Electronic Engineers; the Outstanding Professional Achievement in Science Award from the Affiliate Societies Council of Dayton, Ohio; and a Fellow appointment from the International Society for Optical Engineering.

Grote has directed a number of key technologies from seedling research into internationally recognized programs, and his efforts have spurred the production of numerous seminal joint publications and technology transitions. He is credited with more than 100 invited plenary and keynote lectures at symposia, conferences, universities, and industry and government laboratories. He has lectured worldwide and his work has been published in top-tier journals, resulting in numerous successful international scientific collaborations and breakthroughs. His work has been cited more than 200 times in top journals, and his research has been highlighted by coverage in many leading publications.

His current research focus involves DNA-based bio-organic materials and devices. He formulated and currently leads an international effort investigating bio materials for optical waveguides, electro-optic modulators, organic light emitting diodes, field effect transistors, lasers, and sensors.

Meltzer is with the Air Force Research Laboratory's materials and manufacturing directorate at Wright-Patterson AFB, Ohio.

ARMY NEWS SERVICE (SEPT. 26, 2008)
Two TACOM LCMC Employees Receive First DA Master Black Belt Certifications
TACOM LCMC Public Affairs
Jim Wasiloff and Mary Nelson, assigned to the G5/7 at Tank-Automotive and Armaments Command Life Cycle Management Command, own the distinction of being the first and second Army employees to be granted the Department of the Army Lean Six Sigma Master Blackbelt Certification.

Requirements included several weeks of intensive training in Washington, D.C., a comprehensive exam, eight weeks of co-teaching blackbelt classes at distant locations, coaching and mentoring blackbelts through various projects, while completing their own Lean Six Sigma projects.

Maj. Gen. William M. Lenaers presented Wasiloff with his official certificate at an award ceremony April 16, and the new TACOM LCMC Commander Maj. Gen. Scott G. West presented Nelson with her official certificate Aug. 5.

Kevin Fahey, the program executive for Program Executive Office–Ground Combat Systems, who also serves as the TACOM LCMC Lean Six Sigma executive deployment advisor, presented both of them with unique coins, provided and personalized by the Department of the Army. Each coin has the Master Black Belt's name engraved; and the coins are stamped 00001 and 00002 signifying the first and second DA-certified Master Black Belts.

ARMY NEWS SERVICE (OCT. 2, 2008)
RDECOM Inventors Patent Multi-Channel Technology with Wide Array of Uses
Cindy Wallace
Two Redstone Arsenal employees recently developed a patented technology with potential uses in radar, sonar, imaging, satellites, global positioning systems, communications devices, and wireless communications, according to the U.S. Army Aviation and Missile Research, Development and Engineering Center.

The technology, dubbed the Apparatus and Method for Multi-channel Equalization, enables sensors to pick the

best channel from those available and avoid signal quality breakdowns that can wreck system performance, according to inventors Jeffrey Levasseur and Brent Worley. It also brings another patent to the AMRDEC portfolio of technology advances, which the U.S. Army Research, Development and Engineering Command element routinely shares with civilian enterprises.

The two inventors have a long history with AMRDEC. Levasseur began his career there 26 years ago experimenting with prototype radar systems and has earned two Army Research and Development Achievement Awards for his contributions. Worley joined AMRDEC more than 21 years ago experimenting with digital beam forming arrays and adaptive signal processing. The two men both now work at the advanced technology division of the advanced sensors, guidance, and electronics directorate.

Improving the performance of sensor systems is important to AMRDEC, which works to deliver the best performance to Army warfighters. Some advanced sensors use what is called a channel-matching process to work better in environments with a lot of interference. The process involves having the multi-channel system select a reference channel from among the many available to it. Until this advancement, systems would pick a channel arbitrarily. About 10 years ago AMRDEC's researchers realized they could improve that process by coming up with a way for sensors to select a reference channel intelligently. The resulting invention significantly improves performance by increasing system sensitivity and allowing the system to make real-time adjustments to prevent the failures that can occur with existing technology.

"The improvements include an apparatus and an algorithm that select a reference channel in the adaptive process during each system calibration cycle, producing optimal, or near optimal, channel matching" said Levasseur.

The invention now becomes part of AMRDEC's technology commercialization program, which the center uses to stimulate commercial use of technologies it has developed.

Wallace is with the U.S. Army Aviation and Missile Research, Development and Engineering Center at Redstone Arsenal, Ala.

MEDICAL COMMUNICATIONS FOR COMBAT CASUALTY CARE (MC4) NEWS RELEASE (SEPT. 29, 2008)

MC4 Becomes First Product Management Office to Win Army Superior Unit Award

FORT DETRICK, Md.—During a change of charter ceremony held Sept. 25 at Fort Detrick, Md., the Army's former Medical Communications for Combat Casualty Care (MC4) Commander Lt. Col. Edward Clayson announced MC4's selection for the Army Superior Unit Award.

Digital health recording and automated medical logistics efforts on the battlefield will be led by the new commander for the MC4 Product Management Office, Lt. Col. William Geesey.

MC4 is the first Army product management office and fifth Army acquisition organization to win the ASUA.

"This award pays as much a tribute to our deployed medical professionals and commanders as it does to the MC4 workforce," Clayson said. "ASUA recipients exemplify superior performance of exceptionally difficult tasks. Expanding MC4 systems and services globally to all deployed medical forces in 13 countries, and closing the digital medical recording gap are a testament of great teamwork between an IM/IT [information management/information technology] solution and its end users and beneficiaries."

Assuming MC4's fourth product manager role since 1999, Geesey forecasts continued improvements on the electronic medical recording efforts, heightened training and support roles, and a renewed focus on medical logistics initiatives.

"Ensuring tactical medical units have the resources, the know-how, and the support necessary to succeed on the DoD's digital medical recording effort is paramount," Geesey said. "The user's success is our success."

To date, MC4 has trained more than 31,000 medical professionals and has fielded 26,000 systems to the battlefield in support of Operations Iraqi and Enduring Freedom, as well as contingency operations worldwide. As a result, more than 8 million electronic health records have been captured on the battlefield via MC4. In May 2008, the Army Surgeon General announced the worldwide expansion of MC4 in the war zone.

MC4 integrates, fields, and supports a medical information management system for Army tactical medical forces, enabling a comprehensive, lifelong electronic medical record for all servicemembers, and enhancing medical situational

awareness for operational commanders. The Army's Program Executive Office, Enterprise Information Systems (PEO EIS), Fort Belvoir, Va., oversees the MC4 Product Management Office, headquartered at Fort Detrick, Md. For more information on MC4, visit <www.mc4.army.mil>.

Media contact: Ray Steen, MC4 Public Affairs Officer, 301-815-5808 or ray.steen@us.army.mil.

U.S. ARMY ACQUISITION SUPPORT CENTER
(OCT. 5, 2008)
U.S. Army Acquisition Corps (AAC) Awards Ceremony Recognizes Acquisition Stars
ARLINGTON, Va.—The U.S. Army acquisition community held its 2008 Army Acquisition Corps Annual Awards Ceremony Oct. 5. The event, appropriately themed "Celebrating Our Acquisition Stars," honored the outstanding accomplishments of the acquisition workforce's most extraordinary members and the teams they lead, said Dean G. Popps, principal deputy assistant secretary of the Army for acquisition, logistics, and technology, and key speaker for the ceremony.

"We are the Army Acquisition Enterprise with a portfolio of fewer than 43,000 military and civilian workforce members who manage roughly 25 percent of the Army's budget. We are proud of our mission to equip and sustain the world's most capable, powerful, and respected Army," said Popps, emphasizing the mission-critical role acquisition professionals play in supporting the warfighter. "This mission requires a highly skilled workforce capable of developing, acquiring, fielding, and sustaining the equipment our soldiers depend upon."

U.S. Army Acquisition Support Center Deputy Director Col. Brian Winters presided over the event as master of ceremonies. The evening's awards included:
- The Army Life Cycle Logistician of the Year Award
- The Secretary of the Army Award for Excellence in Contracting–Barbara C. Heald Award
- The Acquisition, Logistics, and Technology Continuous Process Improvement Award
- The Inaugural Assistant Secretary of the Army (Acquisition, Logistics and Technology) (ASA[ALT]) Contracting Noncommissioned Officer Award for Contracting Excellence
- The Department of the Army Research and Development Laboratory of the Year Awards
- The Secretary of the Army Acquisition Director and Project and Product Manager of the Year Awards
- The Army Acquisition Excellence Awards

2008 Army Life Cycle Logistician of the Year
Lt. Col. Vincent Johnston, Joint Program Executive Office (PEO) Chemical and Biological Defense

2008 Secretary of the Army Award for Excellence in Contracting–Barbara C. Heald Award
Suzanne Anderson, U.S. Army Communications-Electronics Life Cycle Management Command (LCMC)

2008 ASA(ALT) Contracting Noncommissioned Officer Award for Contracting Excellence
Master Sgt. Christopher Bowers, US. Army Acquisition Support Center (with duty at Lackland AFB, Texas)

2008 Acquisition, Logistics, and Technology Continuous Process Improvement Award
Hellfire Missile System RESET Project Team, PEO Missiles and Space, Joint Attack Munitions Systems Project Office

2008 Department of the Army Research and Development Laboratory of the Year Awards Research Laboratory of the Year
U.S. Army Engineer Research and Development Center (ERDC), U.S. Army Corps of Engineers

2008 Department of the Army Research and Development Laboratory of the Year Awards Large Development Laboratory of the Year
U.S. Army Armament Research, Development, and Engineering Center (ARDEC), U.S. Army Materiel Command (AMC)

2008 Department of the Army Research and Development Laboratory of the Year Awards Small Development Laboratory of the Year
U.S. Army Natick Soldier Research, Development, and Engineering Center, AMC

2008 Department of the Army Research and Development Laboratory of the Year Awards Collaboration Team of the Year
- U.S. Army Medical Research and Materiel Command, U.S. Army Research Laboratory (ARL), U.S. Army Institute of Surgical Research, and U.S. Army Aeromedical Research Laboratory for the Joint Trauma Analysis and Prevention of Injury in Combat
- U.S. Army Simulation and Training Technology Center, U.S. Army Research Institute for the Behavioral and Social Sciences, and ARL for the Learning with Adaptive Simulation and Training

- U.S. Army Tank Automotive Research, Development, and Engineering Center (TARDEC); ARL; ARDEC; and ERDC for the High-Mobility Multipurpose Wheeled Vehicle Improvements Program
- TARDEC and ARL for the Mine Resistant Ambush Protected (MRAP) Expedient Armor Program
- U.S. Army Communications-Electronics Research, Development, and Engineering Center and TARDEC for the Optimization of Communications and Electronic Warfare Antenna Placement on MRAP Vehicles

2008 Secretary of the Army Acquisition Director and Project and Product Manager of the Year Awards Acquisition Director of the Year at the Lieutenant Colonel Level
Lt. Col. William Sanders, Defense Contract Management Agency (DCMA), DCMA St. Petersburg and DCMA Kuwait

2008 Secretary of the Army Acquisition Director and Project and Product Manager of the Year Awards Product Manager of the Year
Lt. Col. Shawn Gresham, PEO Aviation, Product Manager Medium-Altitude Endurance, Unmanned Aircraft Systems

2008 Secretary of the Army Acquisition Director and Project and Product Manager of the Year Awards Acquisition Director of the Year at the Colonel Level
Col. Joseph Bass, U.S. Army Sustainment Command

2008 Secretary of the Army Acquisition Director and Project and Product Manager of the Year Awards Project Manager of the Year
Col. John McGuiness, PEO Soldier, Project Manager Soldier Equipment

2008 Army Acquisition Excellence Awards Individual Sustained Achievement
Jeffrey Simonis, U.S. Army TACOM LCMC Acquisition Center

2008 Army Acquisition Excellence Awards Equipping and Sustaining Our Soldier Systems
- MRAP Joint-Service Test and Evaluation Team, U.S. Army Test and Evaluation Command, U.S. Army Aberdeen Test Center
- MRAP Expedient Armor Program Team, U.S. Army Research, Development, and Engineering Command, TARDEC

2008 Army Acquisition Excellence Awards Information Enabled Army General Fund Enterprise Business System
PEO Enterprise Information Systems

2008 Army Acquisition Excellence Awards Transforming the Way We Do Business
Rapid Fielding Initiative Team, PEO Soldier

The U.S. Army Acquisition Support Center supports Army warfighter readiness by developing a world-class professional acquisition workforce, effectively acquiring and stewarding resources, and providing customers with the best possible products and services. For additional information about USAASC, visit <http://asc.army.mil>.

For more information about the 2008 AAC Awards Ceremony, contact Ben Ennis at 703-805-1035 or ben.ennis@us.army.mil.

DEPARTMENT OF DEFENSE NEWS RELEASE
(OCT. 6, 2008)
$1M Wearable Power Prize Competition Winner Announced
The Department of Defense (DoD) announced today that the DuPont/Smart Fuel Cell (SFC) Team was awarded a $1 million top prize for winning the Wearable Power Prize competition.

Designed to spur innovation, the competition was launched in July 2007 by the DoD's Research and Engineering Directorate to help develop a long-endurance, lightweight power pack for warfighters in the field. After beginning with 169 registered entries, the ultimate testing concluded on Oct. 4 when the final six teams met at Marine Corps Air Ground Combat Center Twentynine Palms, Calif., to determine the winner.

DuPont/SFC won the competition by building the lightest wearable system that provided an average of 20 watts of power for more than 96 hours and weighed less than 4,000 grams, or 8.8 pounds. AMI of Ann Arbor, Mich., was awarded $500,000 for second place, and Jenny 600S of Middleburg, Va., won the $250,000 third place prize.

All of the finalists used either fuel-cell or battery technologies or a combination of both to meet the rigorous standards set by the DoD.

"The winners, and really all the teams that competed, have moved wearable power technology forward," said William Rees Jr., the deputy under secretary for defense laboratories and basic sciences. "But the real winners from this competition are our ground warfighters, as these systems show great promise to reduce the weight of batteries they have to carry while performing their critical missions."

Rees, who sponsored the DoD Wearable Power Prize, also hopes this competition will inspire scientists and engineers.

"The rules we developed for this DoD competition attracted small businesses, individual inventors, and large companies alike," said Rees. "Our nation has tremendous capacity for innovation, so we hope that this and future competitions also motivate the scientific community to continue important advancements in technology."

More information on the Wearable Power Prize can be found at <www.dod.mil/ddre/prize/final_event.html>.

Media contact: Navy Cmdr. Darryn James, DoD Public Affairs, 703-693-8287.

AIR FORCE MATERIEL COMMAND NEWS RELEASE
(OCT. 6, 2008)
Civilian Receives Meritorious Service Award
Mindy Cooper
WRIGHT-PATTERSON AIR FORCE BASE, Ohio—A civilian assigned to the Air Force Research Laboratory's Materials and Manufacturing Directorate received the Air Force Meritorious Civilian Service award Sept. 2.

Dr. Roland Dutton received the second highest honorary award provided to civilian employees by the Air Force in recognition of his distinguished performance as the chief of the metals branch of the metals, ceramics, and nondestructive evaluation division. Dr. David Walker, director of the materials and manufacturing directorate, presented the award.

Dutton was noted for leading a branch of over 60 government and contractor personnel to execute a research and development program with an average annual budget exceeding $30 million.

"His leadership and vision propelled the metals branch to become the leading research and development organization for advanced metals and processes for aerospace applications in the nation," said Dr. Charles Ward, chief of the metals, ceramics, and nondestructive evaluation division. "Additionally, Dr. Dutton led the Air Force's research and development

efforts in metals to not only achieve command-wide impact in technology, acquisition, and system sustainment, but national impact to the aerospace industry. "

Dutton also led the joint Air Force-Defense Advanced Research Projects Agency Accelerated Insertion of Materials program to couple materials modeling and simulation with aerospace structural design tools. The multi-million dollar program's goal was to inspire a paradigm shift in the way in which new aerospace metals are developed, transitioned, and sustained.

Officials also noted Dutton's ability to build lasting materials research and development partnerships at the national level. He led and transformed a congressional interest program with the University of Missouri-Rolla to become a national-level materials research and development effort that directly supports the mission of the command. His guidance led to the creation of the Center for Aerospace Manufacturing Technologies, an innovative center for research and development collaboration between academia, industry, and government.

Dutton continues to support and guide the 10-year-old Metals Affordability Initiative, or MAI, program to grow to a model for government research and development. The collaborative-based approach he has nurtured means that all interested Air Force suppliers conduct pre-competitive, collaborative research on advanced metals and processes.

Dutton also led his branch to solve numerous time-critical materials engineering issues of substantial importance to the Air Force. He led his team to quickly identify and resolve improperly manufactured titanium bulkheads in the F-22 structure, allowing the program to continue production. His team also made significant contributions to the F-22 by solving a production-halting, Laser Shock Processing-induced cracking issue on F119 fan blades, as well as a solution to a Minuteman III rocket component failure that won his team the 2007 Scowcroft Award for Intercontinental Ballistic Missile Acquisition and Sustainment.

Cooper is with the Air Force Research Laboratory's materials and manufacturing directorate at Wright-Patterson AFB, Ohio.

AMERICAN FORCES PRESS SERVICE
(OCT. 21, 2008)
Gates Honors Career Civilian Employees for Service, Dedication

WASHINGTON—Defense Secretary Robert M. Gates honored career civilian employees from throughout the depart-

ment on Oct. 21, crediting them with providing extraordinary support to warfighters and their families while improving efficiency and saving taxpayer dollars.

Gates presented seven employees the Distinguished Civilian Service Award, the highest department honor recognizing exceptional contributions by a civil servant. He also presented the David O. Cooke Excellence in Public Administration Award that recognizes a nonmanagerial department employee who exhibits potential as a future federal executive.

"It has been an honor to work with the people in this department—professionals whose overriding priority is the defense of our nation," Gates told the honorees.

He noted the broad range of pursuits in which the group has excelled: providing housing for troops, fielding new weapons systems while ensuring support for troops in the field, teaching safety training to foreign partners, helping to stand up U.S. Africa Command, negotiating treaties with allies, and training new leaders.

Gates told the honorees their decision to dedicate themselves to public service "is to the betterment of our 2.7 million men and women serving in the active and Reserve armed forces and to our leaders here."

Michael L. Rhodes, acting director for the DoD Office of Administration and Management and host of the awards ceremony, said the award recipients reflect the tremendous dedication public servants demonstrate every day.

The winners were selected through an extensive review process that culminated in 25 nominations, Rhodes said. Ultimately, those chosen for honors "have truly set themselves apart and proved themselves worthy," he said.

Honorees awarded were:
- Stephen A. Fleet, director of Missile Defense Agency's Warfighter Support Center, who was recognized for excellence in leading the center through rapid changes while providing vital support to the warfighter community;
- Steven M. Huybrechts, a director in the DoD Networks and Information Integration Office, for championing the strategy that provided precision targeting, secure unmanned aerial vehicle operations while denying these capabilities to the enemy;
- Frank D. Kenlon, a director in the DoD Acquisition, Technology and Logistics Office, for his roles as the lead negotiator on the Joint Strike Fighter memorandum

of understanding and in drafting and negotiating the U.S.–United Kingdom and U.S.–Australia Defense Trade Cooperation Treaties.
- Claudia S. Knott, the Defense Logistics Agency's acquisition management director, for leading programs that transformed the agency's business practices while improving customer service in its global logistics mission.
- Barbara Estock Mays, deputy intelligence enterprise manager for the Defense Intelligence Agency, for applying innovative approaches to transfer responsibilities and design an intelligence enterprise for the new U.S. Africa Command.
- John K. Russell, tactical safety specialist for Marine Corps Base Hawaii's Base Safety Center, for developing the Marine Corps' forward-deployed ground safety program during Operation Iraqi Freedom II that provided a model for follow-on operations there.
- Edmund G. Zelnio, an engineer in the Air Force Research Laboratory's Sensor Automatic Target Recognition Technology Division, for contributions leading to the successful deployment of new sensor and sensor exploitation technologies in numerous weapons systems.

Gates also presented Umit A. Spencer the David O. Cooke Excellence in Public Administration Award. Spencer, housing maintenance contract monitor with the 354th Civil Engineering Squadron at Eielson Air Force Base, Alaska, was honored for excellence in improving and maintaining 1,474 military family housing units, 48 playgrounds, and five athletic courts.

AIR FORCE MATERIEL COMMAND NEWS RELEASE (OCT. 8, 2008)
AFMC Civilians Among Presidential Rank Award Winners
Air Force Materiel Command Public Affairs
WRIGHT-PATTERSON AIR FORCE BASE, Ohio—President George W. Bush announced recipients of the prestigious Presidential Rank Awards for 2008 on Oct. 6, and the list includes nine civilians currently or recently assigned to Air Force Materiel Command.

There are two categories of rank awards: distinguished and meritorious. Award winners are chosen through a rigorous selection process. They are nominated by their agency heads, evaluated by boards comprised of private citizens, and approved by the President. The evaluation criteria focus on leadership and results.

Specific categories and recipients are:

2008 Distinguished Senior Professionals

Dr. Donald B. Paul, chief scientist, air vehicles directorate, Air Force Research Laboratory, Wright-Patterson AFB.

2008 Distinguished Executives

- Barbara A. Westgate, a member of the Senior Executive Service. Currently, she is assistant deputy chief of staff for strategic plans and programs, Headquarters U.S. Air Force, Washington, D.C. From July 2005 to September 2008, Westgate served as executive director for AFMC at Wright-Patterson AFB.
- Patricia J. Zarodkiewicz, a member of the Senior Executive Service. Currently, she is deputy for budget, Office of the Assistant Secretary of the Air Force for Financial Management and Comptroller, Headquarters U.S. Air Force. From June 2002 to June 2005, she served as deputy director of financial management at Headquarters AFMC at Wright-Patterson AFB. From July 2005 to September 2005, she served as director of financial management at Headquarters AFMC.

2008 Meritorious Senior Professionals

- Dr. Alok Das, a member of the scientific and professional cadre of senior executives. He is the senior scientist for design innovation for AFRL at Wright-Patterson AFB.
- Barry L. Farmer, chief scientist for AFRL's materials and manufacturing directorate, at Wright-Patterson AFB.

2008 Meritorious Executives

- David C. Bond, a member of the Senior Executive Service. Currently, he is executive director, Air Force Flight Test Center at Edwards AFB, Calif. He was selected for reassignment as director, engineering and technical management, Headquarters AFMC. He assumed that position in late October 2008.
- Patsy J. Reeves, a member of the Senior Executive Service. She is the director of contracting for the Aeronautical Systems Center at Wright-Patterson AFB.
- Joe Sciabica, a member of the Senior Executive Service. He is executive director for AFRL at Wright-Patterson AFB.
- Dr. Larry B. Simpson, a member of the Senior Executive Service. He is director, 308th Armament Systems Wing at Eglin AFB, Fla.

Each year, the President selects an elite group of career members of the Senior Executive Service, Senior-Level, and Scientific and Professional corps for their exceptional leadership, accomplishments, and service over an extended period of time.

Michael Hager, acting director of the U.S. Office of Personnel Management, which administers the Presidential Rank Award program, said the winners represent the cream of the crop within the federal executive ranks.

"Their professional dedication and commitment to excellence is helping to advance President Bush's agenda for enhancing federal government performance and creating a more effective civil service," Hager said.

The honor carries with it a cash award for recipients. In addition, each winner receives a signed certificate from the President and a lapel pin.

ARMY NEWS SERVICE (OCT. 14, 2008)
Commands Garner Shingo, Process-Improvement Awards
C. Todd Lopez

WASHINGTON—The Army Materiel Command claimed six Shingo Prizes in 2008, and other commands received a variety of process-improvement awards at the Pentagon Oct. 10.

During the awards ceremony at the Pentagon Hall of Heroes, six organizations within AMC were honored with the Shingo Prize for Excellence in Manufacturing, sometimes referred to as the "Nobel Prize of manufacturing." The Shingo Prize has been awarded each year since 1988 by the Jon M. Huntsman School of Business at Utah State University. The AMC organizations were recognized for their implementation of Lean and Six Sigma principles.

Gen. Benjamin S. Griffin, AMC commander, said developing better Lean processes has been a journey for AMC that has resulted in both savings for the Army and better service to AMC's customers.

"We know there are significant savings due to Lean—tremendous dollar savings. We can quantify that," he said. "But at the end of the day, it's meant to [provide] better support to our customers in the field. That's what this is all about."

Griffin said improvements in AMC's manufacturing processes through implementation of Lean and Six Sigma processes have made doing business with the Army more enticing to private sector companies.

"When I first came to the command, there were two major corporations that looked at me and said , 'General, if you were more efficient we would do business with you. You are not efficient so we won't do business with you in your

depots and arsenals,'" he said. "Today both those companies do business with us."

During the ceremony, the Army also handed out its own awards for implementation of Lean and Six Sigma process improvement. That the Army is now handing out such awards is evidence the Service has made headway in institutionalizing Lean and Six Sigma practices, said Lt. Gen. Robert E. Durbin, special assistant to the chief of staff of the Army for enterprise management.

"We are at a critical juncture in our Army's LSS deployment," he said. "The important step of institutionalizing Lean/Six Sigma to achieve the enterprise-level deployment maturity requires building internal self-sustainment capability. Recognizing the successful efforts of these process-improvement practitioners today demonstrates we are well on our way in achieving that internal institutional self-sustainment capability."

The awards presented at the ceremony include:

2008 Lean Six Sigma Non-Gated Project Team Award
- Anniston Army Depot
- Office of the Assistant Chief of Staff, Installation Management

2008 Lean Six Sigma Define, Measure, Analyze, Improve, and Control/Design for Lean Six Sigma Project Team Award
- U.S. Army Garrison–Alaska
- Communications Electronics Command, Life Cycle Management Command
- Office of the Assistant Chief of Staff, Installation Management
- U.S. Army Europe

Organizational Deployment Award
Office of the Surgeon General, U.S. Army Medical Command

2008 Shingo Prize Silver Medallion Recipients
Red River Army Depot–Heavy Expanded Mobility Tactical Truck Production Team, Texarkana ,Texas

2008 Shingo Prize Bronze Medallion Recipients
- Letterkenny Army Depot–Biological Integrated Detection System, Chambersburg, Pa.
- Red River Army Depot–PATRIOT Missile Team, Texarkana, Texas
- Red River Army Depot–Tactical Trailer Team, Texarkana, Texas

- Tobyhanna Army Depot, AN/ASM-189 Maintenance Electronic Shop Van, Tobyhanna, Pa.
- Tobyhanna Army Depot–AN/TYQ-23 Command and Control System, Tobyhanna, Pa.

Both Lean and Six Sigma are business process improvement tools developed chiefly in the private sector to focus on increasing value to customers, saving time and money, reducing waste, and improving product quality. A process can be made Lean by re-engineering it to eliminate steps that add no value to the end product, officials said. They said Six Sigma deals primarily with eliminating defects and errors in manufacturing.

ARMY NEWS SERVICE (OCT. 23, 2008)
President Honors Top Military Surface Deployment and Distribution Civilian
SDDC Command Affairs
SCOTT AIR FORCE BASE, Ill.—Patricia M. Young, an Air Force Senior Executive serving as deputy to the commander, Military Surface Deployment and Distribution Command, has been named a Meritorious Executive in the Presidential Rank Awards for 2008. President George W. Bush announced recipients of the prestigious awards October 6.

Each year since the establishment of the Senior Executive Service in 1978, the President has conferred the ranks of Distinguished Executive and Meritorious Executive on a select group of career members of the SES who have provided exceptional service to the American people over an extended period of time.

The Meritorious Executive rank is awarded to leaders for sustained accomplishments. Only 5 percent of SES career members may receive this award, a silver pin, and a framed certificate signed by the President.

Her dedication during a time of transition for SDDC and its employees was instrumental in Young's recognition by the President.

"I am deeply honored and humbled by this recognition," Young said. "The accomplishments of the past few years would not have been possible without the confidence of my leadership and the hard work of our military and civilian workforce."

As deputy to the SDDC commander, Young is responsible for facilitating continuous improvement and innovation in the development of distribution policies, plans, and programs supporting their global mission. These responsibilities

impact joint service force deployment and logistics operations.

Young entered federal service in 1985 through the Palace Acquire Career Program with the Air Force Materiel Command, Wright-Patterson AFB, Ohio. Before being assigned to SDDC, Young was assigned to U.S. Transportation Command from 1993-2005. She joined SDDC as deputy to the commander in 2005.

SDDC provides global surface deployment and distribution services to meet the nation's objectives. SDDC deploys and sustains more than 90 percent of the DoD equipment and supplies by leveraging the capability of commercial industry and other military services.

For more information on the Presidential Rank Award, visit the Office of Personnel Management Web site at <www.opm.gov/ses/performance/presrankawards.asp>.

DEFENSE LOGISTICS AGENCY NEWS RELEASE (OCT. 22, 2008)
Defense Secretary Presents Top Civilian Award to DLA Acquisition Chief
Kathleen T. Rhem

Scottie Knott, the Defense Logistics Agency's director of acquisition management, received the Defense Department's highest civilian award in a Pentagon ceremony Oct. 21.

Defense Secretary Robert M. Gates presented Knott with the Department of Defense Distinguished Civilian Service Award.

"It has been an honor to work with the people in this department—professionals whose overriding priority is the defense of our nation," Gates told Knott and six other awardees.

Gates conceded that it's not always fashionable in Washington to honor federal government employees, and that some politicians have been elected by criticizing the people they seek to lead.

"During my career, however, I have dealt with governments all over the world and have found that the United States has the most dedicated, most honest, and most capable public servants of any," he said.

The secretary praised dedicated career employees, who he said provide stability through leadership changes. "You are the foundation that allows the Defense Department, the largest and most complex organization on the planet, to operate smoothly and efficiently," he said.

"Public service can often seem to be a thankless job," he said, adding that he counsels young people to accept the challenges because, "in truth, the satisfactions far outnumber the difficulties."

Gates told today's honorees their decision to dedicate themselves to public service "is to the betterment of our 2.7 million men and women serving in the active and Reserve armed forces and to our leaders."

DLA Director Army Lt. Gen. Robert Dail nominated Knott for the award for her "absolutely exceptional accomplishments" throughout her career, he said in a note to DLA leaders.

"Scottie has been in the forefront of acquisition excellence in DLA and the Department of Defense through her contributions to our Enterprise Business System ... extending the DLA enterprise through [depot-level reparable] procurement, strategic supplier alliances, strategic materiel sourcing, electronic commerce, procurement integrity, and countless other successful initiatives," Dail wrote.

Knott has been DLA's director of acquisition management since February 2007. She also has held several other high-level positions within the agency.

"Her selection for this prestigious award confirms what we all know —Scottie Knott is a great leader of exceptional character and accomplishments," Dail wrote.

According to the citation that accompanies the award, Knott "is a dynamic force within DoD and has immeasurably contributed to advances in acquisition management, logistics, and electronic commerce."

"She is a passionate advocate for change and has been instrumental in driving the department to embrace innovative logistics solutions to better support DoD customers," the citation continues.

The Department of Defense Distinguished Civilian Service Award recognizes individuals whose careers reflect exceptional devotion to duty and extremely significant contributions of broad scope to the efficiency, economy, or other improvement in the operations of DoD.

Donna Miles of American Forces Press Service contributed to this release.

Navy Recognizes Outstanding Energy Programs
Naval Facilities Engineering Command Headquarters Public Affairs

WASHINGTON—The Department of the Navy recognized six Navy and Marine Corps organizations Oct. 22 that have made notable progress toward DoN and federal goals to reduce energy and water consumption at its annual Secretary of the Navy Awards ceremony at the U.S. Navy Memorial in Washington.

"Energy challenges are everywhere. That's why the Department of the Navy has a multi-layered approach to energy efficiency, energy security, and energy independence," said B.J. Penn, assistant secretary of the Navy for installations and environment, and guest speaker.

"I'm personally excited about the opportunities ahead for embracing energy and water efficiency ... and increased use of renewable energy, and making it mainstream in our operations," he said.

The six commands awarded the SECNAV 2008 Energy and Water Management Award for innovative energy management, successful use of energy, superior awareness, and energy conservation principles during FY 2007 included:

- Naval Base Ventura County (Pt. Mugu, Calif.)—Navy Large Shore Category. Naval Base Ventura County achieved a 14 percent reduction from their fiscal year (FY) 2003 energy baseline. Their projects included HVAC and control system upgrades, daylighting, hangar and warehouse lighting upgrades, and compressor replacements. They also made numerous improvements in water efficiency through water reclamation, smart landscaping, reduced irrigation, xeriscaping, and the installation of low-flow spray nozzles at galleys. They implemented $13 million in energy and water efficiency measures that save $1.7 million per year in utility costs.

- Naval Base Point Loma (San Diego)—Navy Small Shore Category. Naval Base Point Loma has achieved a 25 percent reduction from their FY 2003 baseline. The base combined a strong energy awareness program with projects such as installing a 57.8 kilowatt photovoltaic system and replacing a 20-year-old boiler with microturbines and smaller high efficiency boilers. A focus on locating and repairing water leaks is saving more than 20 million gallons of water. A $1 million investment in energy and water initiatives is saving nearly $500,000 annually in utility costs.

- Naval Sea Systems Command's (NAVSEA) Puget Sound Naval Shipyard and Intermediate Maintenance Facility (Bremerton, Wash.)—Industrial Category. NAVSEA Puget Sound Naval Shipyard and Intermediate Maintenance Facility achieved a 13 percent reduction from their FY 2003 baseline. Their projects included installing rapid access cargo doors and replacing single pass water-cooled chillers that support waterfront temporary services. They performed upgrades to exterior lighting, lighting in temporary offices, and in the berthing barges that house ship's force when a ship is in overhaul. A project to convert steam-driven forge hammers to compressed air will significantly reduce the energy required to maintain the temperature of the hammers when not in use. Air movers that exhaust welding smoke from ships in overhaul will be converted from compressed air to electric in most applications. A total investment of nearly $9 million in energy and water-saving initiatives is reducing utility costs by $1.7 million per year.

- Marine Corps Air Ground Combat Center (MCAGCC) Twentynine Palms (Twentynine Palms, Calif.)—Marine Corps Category. MCAGCC 29 Palms has achieved a 22 percent reduction from their FY 2003 baseline. The combat center supported a well-rounded program including a capital investment of $5 million for energy improvements. Focus was on converting several buildings from evaporative cooling to chilled water systems with full Energy Management and Control System (EMCS) packages and extending EMCS to additional buildings. Other projects included upgrading 15 inoperable solar water heating systems, installing lighting and photocell controls, and upgrading the EMCS controls for a large chiller. The combined utility cost savings from these initiatives is more than $1 million annually.

- USS Bonhomme Richard (LHD 6)—Large Ship Category. Bonhomme Richard saved more than 37,446 barrels of fuel in FY 2007 compared to the LHD 1 class average fuel usage. The $3.6 million in fuel savings is attributed to a strong command commitment to energy conservation and senior leadership participation in Naval Sea Systems Command's energy conservation seminars and workshops. As an example of command commitment, the commanding officer and executive officer conducted weekly tours through all engineering spaces aboard, assessing methods to improve energy usage. The presence of senior leadership on the deck plates motivated junior personnel to participate in energy awareness and aggressive fuel management practices.

- USS Nitze (DDG 94)—Small Ship Category. Nitze saved more than 20,500 barrels of fuel in FY 2007 compared to the DDG 51 class average fuel usage, a savings of nearly $2 million. A strong commitment from senior leadership was key to their success, demonstrated by extensive all-hands attendance at energy conservation training classes and strict adherence to implementing energy efficiency checklists. While underway, Nitze operates in Fuel Efficient Pitch Mode and consistently exhibits 10 percent fuel savings on average. Nitze routinely monitors equipment to ensure that redundant ship's systems are left off until they are needed.

The Department of the Navy Energy Program is on target to achieve the federal goals of the Energy Policy Act of 2005 and Executive Order 13423 for efficient use of energy and water resources and the increased use of renewable energy sources. The program avoids millions of dollars in annual commodity costs through innovation, investment in energy efficient technologies, and increased community awareness and participation.

To achieve its current success, DoN has relied on a comprehensive energy program, with centralized resources and program management operating in partnership with regional and installation level resources and implementation. As a result of energy program initiatives worldwide, DoN is avoiding $400 million annually in energy costs, adjusted for inflation, compared to expenditures in 1985.

For more news from Naval Facilities Engineering Command, visit <www.navy.mil/local/navfachq/>.

NEED A REFRESHER ON DOD BEST PRACTICES?
The DoD Acquisition Best Practices Clearinghouse is now live at <https://bpch.dau.mil>. Many government organizations have attempted to develop systems to capture best practices or lessons learned, but have fallen short of success because guidance based on experience is missing, and the gap between "what is a best practice?" and "how do I implement it?" often isn't addressed. The Defense Acquisition University has partnered with elements of the office of the secretary of defense to carefully design and implement the DoD Acquisition BPCh to provide an integrated set of processes and resources enabling users to share experiences and identify practices through evidence of practice effectiveness in environments like their own. Using this evidence-based approach, users can quickly browse, filter, and search stored evidence in a contextual manner that leads them to lessons and practices relevant to their particular program or issues. Note: Best practices are cross-referenced to career fields (job functions) for easy reference.

Message from the Deputy Under Secretary of Defense (Acquisition & Technology)

I am happy to highlight the Defense Acquisition University (DAU) and their excellent work in the creation and launch of ACQuipedia, a Web-enabled acquisition encyclopedia, providing the latest information on topics central to defense acquisition. Visitors to this site <**https://acc.dau.mil/acquipediaws**> will find access to relevant articles, presentations, and charts uploaded by multiple contributors. The site is designed for use by members of the defense acquisition workforce both in the classroom and on the job, and I expect it will offer immeasurable benefits.

—Dr. James Finley

https://acc.dau.mil/acquipediaws

DEFENSE LOGISTICS AGENCY NEWS RELEASE (OCT. 24, 2008)

New Organization To Help Combatant Commanders Manage Acquisition

Jonathan Stack

A new organization housed by the Defense Logistics Agency will provide acquisition support for joint operations involving the Defense Department and other government agencies.

The Joint Contingency Acquisition Support Office officially stood up with a ribbon-cutting ceremony Oct. 20.

"In 2007, Congress directed that DoD implement a programmatic approach to fix problems which exist in contingency contracting and contingency acquisition management," said Tim Freihofer, the office's director. "The JCASO is one of the elements prescribed to implement and carry out that mission."

The JCASO will oversee expeditionary contracting conducted during combat, post-conflict, and contingency operations.

"If you go out to the combatant command logistics directorates, you find that they don't have the expertise available to them to manage the level, size, and scope of contracted support and services that are currently in their plans," Freihofer said. "In order to both train and provide that acquisition expertise, the decision was made to stand up JCASO as opposed to providing the five combatant commanders [their own] acquisition staff."

By and large, he explained, it's more economical to make this 28-member unit available when needed than to maintain a staff element in each of the regional commands.

DoD officials were considering three organizations to host the JCASO: U.S. Joint Forces Command, the Defense Contracting Management Agency, and DLA.

"After looking at all the pros and cons, DLA was the best choice," Freihofer said.

DLA was selected because the agency currently supports all the combatant commands and geographical areas, and already has a mission of sustainment and support. The agency also has acquisition management expertise.

"The whole package of the things that would be required to successfully stand up and field this capability for the combatant commanders is resident in DLA," Freihofer said.

The JCASO's staff will include 17 military members and 11 civilians.

"The staff will provide functional expertise required as well as two deployable teams of five personnel each," Freihofer said.

The teams are organized and split so they will provide dedicated support to the combatant commands. They will plan, train, exercise, and fight with their respective COCOMs.

"This organizational approach provides the COCOM acquisition staff continuity and the bench strength to support high-intensity operations when required," he said.

The U.S. Government depends on contractors now more than ever before, Freihofer said.

Around 200,000 contractors are employed by the U.S. Government. Local nationals hired overseas increase that number significantly.

"If contractors are in a joint operating area, the commander is responsible and must oversee their work in theater," Freihofer said. "In the past, much more was done with our military troops; there were not near as many contractors involved."

Now the JCASO will oversee and manage that, Freihofer said.

DLA Director Army Lt. Gen. Robert Dail lauded the new organization during a briefing Oct. 22. He explained to DLA employees that the JCASO will provide a contract management synchronizing capability from DLA overseas to the regional combatant commanders and provide contract management oversight, synchronization, transition planning, and strategy.

"That's contract excellence," Dail said.

AIR FORCE MATERIEL COMMAND NEWS RELEASE (OCT. 27, 2008)

Air Force Team Works to Lower IED Threat

Chuck Paone

HANSCOM AIR FORCE BASE, Mass.—An Electronic Systems Center office at Hanscom AFB is working to minimize the threat of suicide bombings at the entry points of controlled access zones in Iraq and Afghanistan.

The team has been working since late September to rapidly evaluate technologies designed to detect what are known

as person-borne improvised explosive devices, or PBIEDs. The team, which serves as the Air Force Counter-IED Office, brought four contractors to Hanscom during the last week of September and five more during the week of Oct. 20 to 24.

Each one was given a four-hour block to run its technologies through a precise testing protocol that required them to set up some distance away from a "target" zone. Inside the zone, a series of test subjects wearing loose-fitting robes over their clothes, meant to replicate those routinely worn in Afghanistan, entered one by one. Each walked forward and then retreated past a string of orange cones, allowing the detectors to examine them front and back.

Some of the walkers were carrying concealed, simulated IEDs, which had been carefully designed to mimic the types most commonly found in theater. Others were clean. It was up to the technology operator to determine which was which, and to pinpoint the location of a potential device when one was found.

"The most critical thing is that they're able to do it at stand-off range," said Ed Mason, chief of the Counter-IED Office at ESC. "If we have to be right up with the person in order to detect the device, that's obviously a huge problem."

Therefore, during the tests, checkpoint detectors operated at such a range, using a variety of technologies including infrared and X-ray backscatter to examine those who entered the zone.

In actual operation, if detectors target someone they suspect of carrying a PBIED, they would isolate them and have them lift up or remove their outer clothing for a visual or camera-aided inspection, still at a safe distance, said Jim McMath, an engineer with the IEDD Program Office.

The Department of Defense, through its Joint IED Defeat Office, known as JIEDDO, is looking to bring these capabilities into theater as quickly as possible.

"They came to us in late August and asked if we could start testing some of these technologies within five weeks, and by late September we had the first tests up and running," Mason said. "They knew we had the program management, acquisition and testing skill, and experience to make it happen."

After each round of testing—tests are expected to take place quarterly from here on—the ESC team prepares a report. The report provides a statistical analysis of the Probability of Detection rate and the False Alarm Rate of each technology. Beyond that, the report factors in other variables, such as size, weight, and ease of setup.

"We also determine how hard or simple it is to operate," Mason said. "If it takes a PhD to operate the equipment, we take that into consideration in the report. Likewise, if any Joe Schmoe can run it, we note that."

Once JIEDDO receives and analyzes the Air Force report, it determines which technologies to continue pursuing and will likely provide funds for further technical development. JIEDDO will also ask the ESC team to conduct more rigorous capabilities and limitation testing, which would be done in a sophisticated test environment, such as those available at White Sands Missile Range, N.M., and Eglin Air Force Base, Fla.

Ultimately, the ESC team, at JIEDDO's direction, will put the companies with the most promising technologies on contract for an operational assessment in theater, where users can try it out in real-world action. If it works well, the final step is to get it into production and out to operators en masse.

Some people have asked why the Air Force is involved in efforts to defeat IEDs, which are a ground threat.

"The Defense Department is interested in pursuing good ideas, no matter where they come from, and they'll turn to whichever Service has the ability to test them out and get them fielded," Mason said.

In many cases, counter-IED efforts are achieved jointly. A current example involves the ongoing acquisition of 600 advanced metal detectors, which will be used to reduce threats during the January elections in Iraq. The ESC team conducted the market research to determine what was needed—things such as the ability to zone in on the location of an object on a body and stabilizers that enable outdoor use, regardless of wind or other weather conditions. They also conducted the market research into which vendors could supply what's needed quickly. The Army's Natick (Mass.) Soldiers Center, located about 10 miles from Hanscom AFB, handled the actual procurement of the detectors and all associated equipment.

"This was a great example of the Services working together to find the best and fastest solution," Mason said.

Paone writes for 66th Air Base Wing Public Affairs.

STACKLEY CONFIRMED BY SENATE—ASSUMES DUTIES AS NAVY'S TOP ACQUISITION EXECUTIVE

Sean J. Stackley has assumed the duties of assistant secretary of the Navy for research, development and acquisition following his confirmation by the Senate in 2008. As the Navy's ASN(RDA), Stackley is responsible for the research, development, and acquisition of Navy and Marine Corps platforms and warfare systems, which includes oversight of more than 100,000 people and an annual budget in excess of $50 billion.

Prior to his appointment as ASN(RDA), Stackley served as a professional staff member of the Senate Armed Services Committee. During his tenure with the committee, he was responsible for overseeing Navy and Marine Corps programs, U.S. Transportation Command matters, and related policy for the Seapower Subcommittee. He also advised on Navy and Marine Corps operations and maintenance, science and technology, and acquisition policy.

Stackley began his career as a Navy Surface Warfare Officer, serving in Engineering and Combat Systems assignments aboard USS John Young (DD 973). Upon completing his warfare qualifications, he was designated as an engineering duty officer and served in a series of industrial, fleet, program office, and headquarters assignments in ship design and construction, maintenance, logistics, and acquisition policy.

From 2001 to 2005, Stackley served as the Navy's LPD 17 program manager, with responsibility for all aspects of procurement for this major ship program. Having served earlier in his career as production officer for the USS Arleigh Burke (DDG 51) and project Naval architect overseeing structural design for the Canadian Patrol Frigate, HMCS Halifax (FFH 330), he had the unique experience of having performed a principal role in the design, construction, test, and delivery of three first-of-class warships.

Stackley was commissioned and graduated with distinction from the United States Naval Academy in 1979 with a bachelor of science in mechanical engineering. He holds the degrees of ocean engineer and master of science, mechanical engineering, from the Massachusetts Institute of Technology. Stackley earned certification as a Commonwealth of Virginia professional engineer in 1994.

AMERICAN FORCES PRESS SERVICE
(SEPT. 5, 2008)
New Leader Takes Reins of U.S. Transportation Command
John J. Kruzel

WASHINGTON—The U.S. military command responsible for moving troops and materiel across the globe came under new leadership Sept. 5. In a change-of-command ceremony, Air Force Gen. Duncan J. McNabb took the reins of U.S. Transportation Command, an infrastructure that has carried out 100,000 airlift missions and transported 5 million passengers during operations in Iraq and Afghanistan.

McNabb replaces Gen. Norton A. Schwartz, who left the command to become the Air Force's acting chief of staff last month.

"When [Schwartz] said, 'A promise made is a promise kept,' it [became] the foundation of the command," McNabb told reporters today, referring to his predecessor's guiding principle. " [The command] has built up over time, and what we want to do is make sure we keep that momentum."

Inside a massive airplane hangar, hundreds watched a symbolic tradition as Defense Secretary Robert M. Gates handed McNabb the TRANSCOM flag, which features a winged seahorse—an image that reflects the command's air, sea, and land capabilities.

"With all these moving parts, and with the critical importance of every single mission, there is no doubt that this command requires a special kind of leader—one who can maintain a focus on details within the context of massive and myriad operations," Gates said. "General McNabb is the right man for this job."

The promotions of McNabb and Schwartz come in the wake of recent turbulence in the Air Force. The Service's acquisition process came under fire in June when a congressional investigation found flaws related to a $35 billion contract for refueling tankers.

Two earlier incidents committed by the Air Force sparked international concerns—one involving the erroneous shipment of nuclear missile trigger components to Taiwan, and another in which a B-52 bomber flew across the United States carrying six armed nuclear cruise missiles.

By accepting their respective appointments, McNabb and Schwartz are helping the Air Force "move forward," said Chairman of the Joint Chiefs of Staff Navy Adm. Mike Mullen. "[It] will continue to remind us that our Air Force is the best Air Force in the history of the world."

The admiral said he endorses the latter part of an old maxim that says, "Amateurs worry about strategy, dilettantes worry about tactics, but professionals worry about logistics."

"All of us who have participated in these operations for the last six-plus years, have only been able to do that and accomplish our mission because of this command, and the so many tens of thousands of people who make those operations possible," he added.

DEPARTMENT OF DEFENSE NEWS RELEASE
(SEPT. 8, 2008)
General Officer Announcement
Secretary of Defense Robert M. Gates announced today that the President has made the following nomination: Army Reserve Col. Margaret W. Boor has been nominated for appointment to the grade of brigadier general and assignment as mobilization assistant to the deputy director, Defense Logistics Agency, Fort Belvoir, Va. Boor is currently serving as chief of staff (Troop Program Unit), 81st Regional Readiness Command, Birmingham, Ala.

DEPARTMENT OF DEFENSE NEWS RELEASE
(SEPT. 10, 2008)
Flag Officer Assignments
Chief of Naval Operations Adm. Gary Roughead announced today the following assignments:

Rear Adm. (lower half) Patrick H. Brady is being assigned as deputy commander for undersea warfare, SEA-07, Naval Sea Systems Command, Washington, D.C. Brady is currently serving as commander, Naval Undersea Warfare Center, Washington, D.C.

Capt. David C. Johnson, who has been selected to the rank of Rear Adm. (lower half), is being assigned as commander, Naval Undersea Warfare Center, Washington, D.C. and will continue to serve as deputy commander for undersea technology, SEA-073, Naval Sea Systems Command, Washington, D.C.

DEPARTMENT OF DEFENSE NEWS RELEASE
(SEPT. 16, 2008)
Flag Officer Announcement
Secretary of Defense Robert M. Gates announced today that the President has nominated Navy Rear Adm. Alan S. Thompson for appointment to the grade of vice admiral and assignment as director, Defense Logistics Agency, Fort Belvoir, Va. Thompson is currently serving as commander, Naval Supply Systems Command and chief of Supply Corps, Mechanicsburg, Pa.

DEPARTMENT OF DEFENSE NEWS RELEASE
(SEPT. 17, 2008)
Flag Officer Assignment
Chief of Naval Operations Adm. Gary Roughead announced today the following assignment: Rear Adm. Michael J. Lyden is being assigned as commander, Naval Supply Systems Command/chief of Supply Corps, Mechanicsburg, Pa. Lyden is currently serving as director, Supply, Ordnance and Logistics Operations Division, N41, Officer of the Chief of Naval Operations, Washington, D.C.

DEPARTMENT OF DEFENSE NEWS RELEASE
(SEPT. 22, 2008)
General Officer Announcement
Secretary of Defense Robert M. Gates announced today that the President has made the following nomination: Army Maj. Gen. James H. Pillsbury for appointment to the rank of lieutenant general and assignment as deputy commanding general/chief of staff, U.S. Army Materiel Command, Fort Belvoir, Va. Pillsbury is currently serving as deputy chief of staff for logistics and operations, U.S. Army Materiel Command, Fort Belvoir, Va.

DEPARTMENT OF DEFENSE NEWS RELEASE
(SEPT. 26, 2008)
General Officer Assignment
The Air Force chief of staff announces the assignment of the following general officer: Maj. Gen. Frederick F. Roggero, director, Air, Space and Information Operations, Headquarters Air Mobility Command, Scott Air Force Base, Ill., to chief of safety, Headquarters U.S. Air Force, Pentagon, Washington, D.C.; and commander, Air Force Safety Center, Kirtland Air Force Base, N.M.

DEPARTMENT OF DEFENSE NEWS RELEASE
(OCT. 3, 2008)
General Officer Assignments
The Air Force chief of staff announces the assignments of the following general officers:

Maj. Gen. Gary T. McCoy, director, logistics readiness, deputy chief of staff, logistics, installations and mission support, Headquarters U.S. Air Force, Pentagon, Washington, D.C., to commander, Air Force Global Logistics Support Center, Air Force Materiel Command, Scott Air Force Base, Ill.

Maj. Gen. Robert H. McMahon, director, maintenance, deputy chief of staff, logistics, installations and mission support, Headquarters U.S. Air Force, Pentagon, Washington, D.C., to director, logistics, deputy chief of staff, logistics, installations and mission support, Headquarters U.S. Air Force, Pentagon, Washington, D.C.

GORDON M. KRANZ APPOINTED DIRECTOR, SYSTEMS AND SOFTWARE ENGINEERING (OCT. 14, 2008)

Under Secretary of Defense for Acquisition, Technology and Logistics John J. Young Jr., appointed Gordon M. Kranz the new director, systems and software engineering, effective Oct. 14, 2008. In this role, Kranz is responsible for formulating systems engineering policy and guidance, developmental test and evaluation policy, program assessments and support, and weapons systems software policy. Kranz comes to the office of the secretary of defense from General Dynamics. He has a proven management and technical leadership track record of success on a long list of DoD programs with the Army, Air Force, and Defense Advanced Research Projects Agency. He has served the nation previously as an Air Force officer and brings in-depth expertise in DoD acquisition, technology, and logistics to his new position.

DEPARTMENT OF DEFENSE NEWS RELEASE (OCT. 14, 2008)

General Officer Assignments

The Army chief of staff announces the assignment of the following general officers:

Maj. Gen. Paul S. Izzo, deputy for acquisition and systems management, Office of the Assistant Secretary of the Army (Acquisition, Logistics and Technology), Washington, D.C., to commanding general, U.S. Army Research, Development and Engineering Command, Aberdeen Proving Ground, Md.

Brig. Gen. Peter N. Fuller, deputy commander for systems of systems integration, U.S. Army Research, Development and Engineering Command, Fort Belvoir, Va., to program executive officer, soldier/commanding general, Soldier Systems Center, Fort Belvoir, Va.

Brig. Gen. Robert M. Brown, program executive officer, soldier/commanding general, Soldier Systems Center, Fort Belvoir, Va., to deputy for acquisition and systems management, Office of the Assistant Secretary of the Army (Acquisition, Logistics and Technology), Washington, D.C.

DEPARTMENT OF DEFENSE NEWS RELEASE (OCT. 17, 2008)

Flag Officer Assignment

The Naval Operations Chief announces the assignments of the following flag officer: Rear Adm. Raymond P. English is being assigned as director, Joint Reserve Forces, J9, Defense Logistics Agency, Fort Belvoir, Va. English is currently serving as deputy director of operations, U.S. Transportation Command, Scott Air Force Base, Ill.

DEPARTMENT OF DEFENSE NEWS RELEASE (OCT. 27, 2008)

General Officer Assignments

The Army chief of staff announces the assignment of the following officers:

Maj. Gen. John R. Bartley, program executive officer, Combat Support and Combat Service Support, Warren, Mich., to program manager, Future Combat System (brigade combat team).

Brig. Gen. William T. Crosby, deputy program executive officer, aviation, Redstone Arsenal, Ala., to program executive officer, aviation, Redstone Arsenal, Ala..

Brig. Gen. Robert D. Ogg Jr., deputy program manager, Future Combat Systems Brigade Combat Team, Program Integration (Platforms), Warren, Mich., to program executive officer, Ground Combat Systems, Warren, Mich.

DEPARTMENT OF DEFENSE NEWS RELEASE (OCT. 30, 2008)

Flag Officer Assignments

Chief of Naval Operations Adm. Gary Roughead announced today the following assignments:

Rear Adm. (lower half) Nevin P. Carr Jr. is being assigned as chief of naval research/director, test and evaluation and technology requirements, N091, Office of the Chief of Naval Operations, Washington, D.C. Carr is currently serving as director, Navy International Programs Office, Office of the Secretary of the Navy, Washington, D.C.

Rear Adm. (lower half) Charles M. Lilli is being assigned as director, Supply, Ordnance and Logistics Operations Division, N41, Office of the Chief of Naval Operations, Washington, D.C. Lilli is currently serving as director of logistics and engineering, J4, U.S. Northern Command, Peterson Air Force Base, Colo.

Rear Adm. (lower half) Charles E. Smith is being assigned as program executive officer, enterprise information systems, Office of the Assistant Secretary of the Navy (Research, Development, and Acquisition), Washington, D.C. Smith is currently serving as vice commander, Space and Naval Warfare Systems Command, Norfolk, Va.

Rear Adm. (lower half) Stephen S. Voetsch is being assigned as director, Navy International Programs Office, Office of the Secretary of the Navy, Washington, D.C. Voetsch is currently serving as commander, Operational Test and Evaluation Force, Norfolk, Va.

Acquisition&Logistics Excellence

An Internet Listing Tailored to the Professional Acquisition Workforce

Surfing the Net

Acquisition Central
http://acquisition.gov
Shared systems and tools to support the federal acquisition community and business partners.

Acquisition Community Connection
http://acc.dau.mil
Policies, procedures, tools, references, publications, Web links, and lessons learned for risk management, contracting, system engineering, TOC.

Air Force (Acquisition)
ww3.safaq.hq.af.mil
Policy; career development and training opportunities; reducing TOC; library; links.

Air Force Institute of Technology
www.afit.edu
Graduate degree programs and certificates in engineering and management; Civilian Institution; Center for Systems Engineering; Centers of Excellence; distance learning.

Air Force Materiel Command Contracting Laboratory's FAR Site
http://farsite.hill.af.mil
FAR search tool; *Commerce Business Daily* announcements (CBDNet); *Federal Register*; electronic forms library.

Army Acquisition Support Center
http://asc.army.mil
News; policy; *Army AL&T* Magazine; programs; career information; events; training opportunities.

Army Training Requirements and Resources System
https://www.atrrs.army.mil
Army system of record for managing training requirements.

Assistant Secretary of the Army (Acquisition, Logistics & Technology)
www.alt.army.mil
ACAT Listing; ASA(ALT) Bulletin; digital documents library; links to other Army acquisition sites.

Association for the Advancement of Cost Engineering International
www.aacei.org
Planning and management of cost and schedules; online technical library; bookstore; technical development; distance learning.

Association of Procurement Technical Assistance Centers
www.aptac-us.org
PTACs nationwide assist businesses with government contracting issues.

Association of Proposal Management Professionals
http://www.apmp.org/
Supports capture and proposal managers on defense acquisitions; government-industry acquisition liaison; proposal professional accreditation program.

AT&L Knowledge Sharing System
http://akss.dau.mil
Automated acquisition reference tool covering mandatory and discretionary practices.

Best Manufacturing Practices Center of Excellence
www.bmpcoe.org
National resource to identify and share best manufacturing and business practices in use throughout industry, government, academia.

Central Contractor Registry
http://www.ccr.gov
Registration for businesses wishing to do business with the federal government under a FAR-based contract.

Committee for Purchase from People Who are Blind or Severely Disabled
www.abilityone.gov
Information and guidance to federal customers on the requirements of the Javits-Wagner-O'Day (JWOD) Act.

Defense Acquisition University and Defense Systems Management College
www.dau.mil
DAU Course Catalog; *Defense AT&L* magazine and *Defense Acquisition Review Journal*; DAU/DSMC course schedules; educational resources.

DAU Alumni Association
www.dauaa.org
Acquisition tools and resources; links; career opportunities; member forums.

Defense Advanced Research Projects Agency
www.darpa.mil
News releases; current solicitations; *Doing Business with DARPA.*

Defense Business Transformation Agency
www.bta.mil
Policy; newsletters; Central Contractor Registration (CCR); assistance centers; DoD EC partners.

Defense Information Systems Agency
www.disa.mil
Defense Information System Network; Defense Message System; Global Command and Control System.

Defense Modeling and Simulation Office
www.dmso.mil
DoD modeling and simulation master plan; document library; events; services.

Defense Technical Information Center
www.dtic.mil
DTIC's scientific and technical information network (STINET) is one of DoD's largest available repositories of scientific, research, and engineering information. Hosts over 100 DoD Web sites.

Deputy Under Secretary of Defense for Acquisition, Technology and Logistics
www.acq.osd.mil/at/
Acquisition and technology organization, goals, initiatives, and upcoming events.

Director, Defense Procurement and Acquisition Policy
www.acq.osd.mil/dpap
Procurement and acquisition policy news and events; reference library; acquisition education and training policy, guidance.

DoD Acquisition Best Practices Clearinghouse
https://bpch.dau.mil
The authoritative source for acquisition best practices in DoD and industry. Connects communities of practice, centers of excellence, academic and industry sources, and practitioners.

DoD Defense Standardization Program
www.dsp.dla.mil
DoD standardization; points of contact; FAQs; military specifications and standards reform; newsletters; training; nongovernment standards; links.

DoD Enterprise Software Initiative
www.esi.mil
Joint project to implement true software enterprise management process within DoD.

DoD Inspector General Publications
www.dodig.osd.mil/pubs/
Audit and evaluation reports; IG testimony; planned and ongoing audit projects of interest to the AT&L community.

DoD Office of Technology Transition
www.acq.osd.mil/ott
Information about and links to OTT's programs.

DoD Systems Engineering
www.acq.osd.mil/sse
Policies, guides and information on SE and related topics, including developmental T&E and acquisition program support.

Earned Value Management
www.acq.osd.mil/pm
Implementation of EVM; latest policy changes; standards; international developments.

Electronic Industries Alliance
www.eia.org
Government relations department; links to issues councils; market research assistance.

Electronic Warfare and Information Operations Association
www.myaoc.org
News; conventions, courses; *Journal of Electronic Defense*.

Federal Acquisition Institute
www.fai.gov
Virtual campus for learning opportunities; information access and performance support.

Federal Acquisition Jumpstation
http://prod.nais.nasa.gov/pub/fedproc/home.html
Procurement and acquisition servers by contracting activity; CBDNet; reference library.

Federal Aviation Administration
http://fast.faa.gov
Online policy and guidance for all aspects of the acquisition process.

Federal Business Opportunities
www.fedbizopps.gov
Single government point-of-entry for federal government procurement opportunities over $25,000.

Federal R&D Project Summaries
www.osti.gov/fedrnd/about
Portal to information on federal research projects; search databases at different agencies.

Federal Research in Progress
http://grc.ntis.gov/fedrip.htm
Information on federally funded projects in the physical sciences, engineering, life sciences.

Fedworld Information
www.fedworld.gov
Central access point for searching, locating, ordering, and acquiring government and business information.

Government Accountability Office
http://gao.gov
GAO reports; policies and guidance; FAQs.

General Services Administration
www.gsa.gov
Online shopping for commercial items to support government interests.

Acquisition & Logistics Excellence

An Internet Listing Tailored to the Professional Acquisition Workforce

Surfing the Net

Government-Industry Data Exchange Program
www.gidep.org
Federally funded co-op of government-industry participants, providing electronic forum to exchange technical information essential to research, design, development, production, and operational phases of the life cycle of systems, facilities, and equipment.

GOV.Research_Center
http://grc.ntis.gov
U.S. Dept. of Commerce, National Technical Information Service, and National Information Services Corporation joint venture, single-point access to government information.

Integrated Dual-Use Commercial Companies
www.idcc.org
Information for technology-rich commercial companies on doing business with the federal government.

International Society of Logistics
www.sole.org
Online desk references that link to logistics problem-solving advice; Certified Professional Logistician certification.

International Test & Evaluation Association
www.itea.org
Professional association to further development and application of T&E policy and techniques to assess effectiveness, reliability, and safety of new and existing systems and products.

Joint Capability Technology Demonstrations
www.acq.osd.mil/jctd
JCTD's accomplishments, articles, speeches, guidelines, and POCs.

U.S. Joint Forces Command
www.jfcom.mil
"Transformation laboratory" that develops and tests future concepts for warfighting.

Joint Fires Integration and Interoperability Team
http://www.jfcom.mil/about/com_jfiit.htm
USJFCOM lead agency to investigate, assess, and improve integration, interoperability, and operational effectiveness of Joint Fires and Combat Identification across the Joint warfighting spectrum. (Accessible from .gov and .mil domains only.)

Joint Interoperability Test Command
http://jitc.fhu.disa.mil
Policies and procedures for interoperability certification; lessons learned; support.

Joint Spectrum Center (JSC)
www.jsc.mil
Operational spectrum management support to the Joint Staff and COCOMs; conducts R&D into spectrum-efficient technologies.

Library of Congress
www.loc.gov
Research services; Copyright Office; FAQs.

MANPRINT (Manpower and Personnel Integration)
www.manprint.army.mil
Points of contact for program managers; relevant regulations; policy letters from the Army Acquisition Executive; briefings on the MANPRINT program.

National Aeronautics and Space Administration's Technology Transfer and Partnership Office
http://technology.grc.nasa.gov/
Promotes competitiveness of U.S. industry through commercial use of NASA technologies and expertise.

National Contract Management Association
www.ncmahq.org
Educational products catalog; publications; career center.

National Defense Industrial Association
www.ndia.org
Association news; events; government policy; *National Defense* magazine.

National Geospatial-Intelligence Agency
www1.nga.mil
Imagery; maps and geodata; Freedom of Information Act resources; publications.

National Institute of Standards and Technology
www.nist.gov
Information about NIST technology, measurements, and standards programs, products, and services.

National Technical Information Service
www.ntis.gov
Online service for purchasing technical reports, computer products, videotapes, audiocassettes.

Naval Sea Systems Command
www.navsea.navy.mil
TOC; documentation and policy; reduction plan; implementation timeline; TOC reporting templates; FAQs.

Navy Acquisition and Business Management
www.abm.rda.hq.navy.mil
Policy documents; training opportunities; guides on risk management, acquisition environmental issues, past performance; news and assistance for the Standardized Procurement System (SPS) community; notices of upcoming events.

Navy Acquisition, Research and Development Information Center
www.onr.navy.mil/sci_tech
News and announcements; publications and regulations; technical reports; doing business with the Navy.

Naval Air Systems Command
www.navair.navy.mil
Provides advanced warfare technology through the efforts of a seamless, integrated, worldwide network of aviation technology experts.

Office of Force Transformation
www.oft.osd.mil
News on transformation policies, programs, and projects throughout DoD and the Services.

Open Systems Joint Task Force
www.acq.osd.mil/osjtf
Open systems education and training opportunities; studies and assessments; projects, initiatives and plans; library.

Parts Standardization and Management Committee
www.dscc.dla.mil/programs/psmc
Collaborative effort between government and industry for parts management and standardization through commonality of parts and processes.

Performance-Based Logistics Toolkit
https://acc.dau.mil/pbltoolkit
Web-based 12-step process model for development, implementation, and management of PBL strategies.

Project Management Institute
www.pmi.org
Program management publications; information resources; professional practices; career certification.

Small Business Administration (SBA)
www.sba.gov
Communications network for small businesses.

DoD Office of Small Business Programs
www.acq.osd.mil/osbp
Program and process information; current solicitations; Help Desk information.

Software Program Managers Network
www.spmn.com
Supports project managers, software practitioners, and government contractors. Contains publications on highly effective software development best practices.

Space and Naval Warfare Systems Command
https://e-commerce.spawar.navy.mil
SPAWAR business opportunities; acquisition news; solicitations; small business information.

System of Systems Engineering Center of Excellence
www.sosece.org
Advances the development, evolution, practice, and application of the system of systems engineering discipline across individual and enterprise-wide systems.

Under Secretary of Defense for Acquisition, Technology and Logistics
www.acq.osd.mil
USD(AT&L) documents; streaming videos; links.

U.S. Coast Guard
www.uscg.mil
News and current events; services; points of contact; FAQs.

U.S. Department of Transportation Maritime Administration
www.marad.dot.gov
Information and guidance on the requirements for shipping cargo on U.S. flag vessels.

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Defense AT&L Writer's Guidelines in Brief

Purpose

Defense AT&L is a bi-monthly magazine published by DAU Press, Defense Acquisition University, for senior military personnel, civilians, defense contractors, and defense industry professionals in program management and the acquisition, technology, and logistics workforce. The magazine provides information on policies, trends, events, and current thinking regarding program management and the acquisition, technology, and logistics workforce.

Submission Procedures

Submit articles by e-mail to datl(at)dau.mil or on disk to: DAU Press, ATTN: Carol Scheina, 9820 Belvoir Rd., Suite 3, Fort Belvoir VA 22060-5565. Submissions must include the author's name, mailing address, office phone number, e-mail address, and fax number.

Receipt of your submission will be acknowledged in five working days. You will be notified of our publication decision in two to three weeks.

Deadlines

Issue	Author Deadline
July-August	1 October
March-April	1 December
May-June	1 February
July-August	1 April
September-October	1 June
November-December	1 August

If the magazine fills before the author deadline, submissions are considered for the following issue.

Audience

Defense AT&L readers are mainly acquisition professionals serving in career positions covered by the Defense Acquisition Workforce Improvement Act (DAWIA) or industry equivalent.

Style

Defense AT&L prints feature stories focusing on real people and events. The magazine also seeks articles that reflect your experiences and observations rather than pages of researched information.

The magazine does not print academic papers; fact sheets; technical papers; white papers; or articles with footnotes, endnotes, or references. Manuscripts meeting any of those criteria are more suited to DAU's journal, *Acquisition Review Journal (ARJ)*.

Defense AT&L does not reprint from other publications. Please do not submit manuscripts that have appeared in print elsewhere. *Defense AT&L* does not publish endorsements of products for sale.

Length

Articles should be 1,500 – 2,500 words.

Format

Submissions should be sent via e-mail as a Microsoft® Word attachment.

Graphics

Do not embed photographs or charts in the manuscript. Digital files of photos or graphics should be sent as e-mail attachments or mailed on zip disks or CDs (see address above). Each figure or chart must be saved as a separate file in the original software format in which it was created.

TIF or JPEG files must have a resolution of 300 pixels per inch; enhanced resolutions are not acceptable; images downloaded from the Web are not of adequate quality for reproduction. Detailed tables and charts are not accepted for publication because they will be illegible when reduced to fit at most one-third of a magazine page.

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Author Information

Contact and biographical information will be included with each article selected for publication in *Defense AT&L*. Please include the following information with your submission: name, position title, department, institution, address, phone number, and e-mail address. Also, please supply a short biographical statement, not to exceed 25 words, in a separate file. We do not print author bio photographs.

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